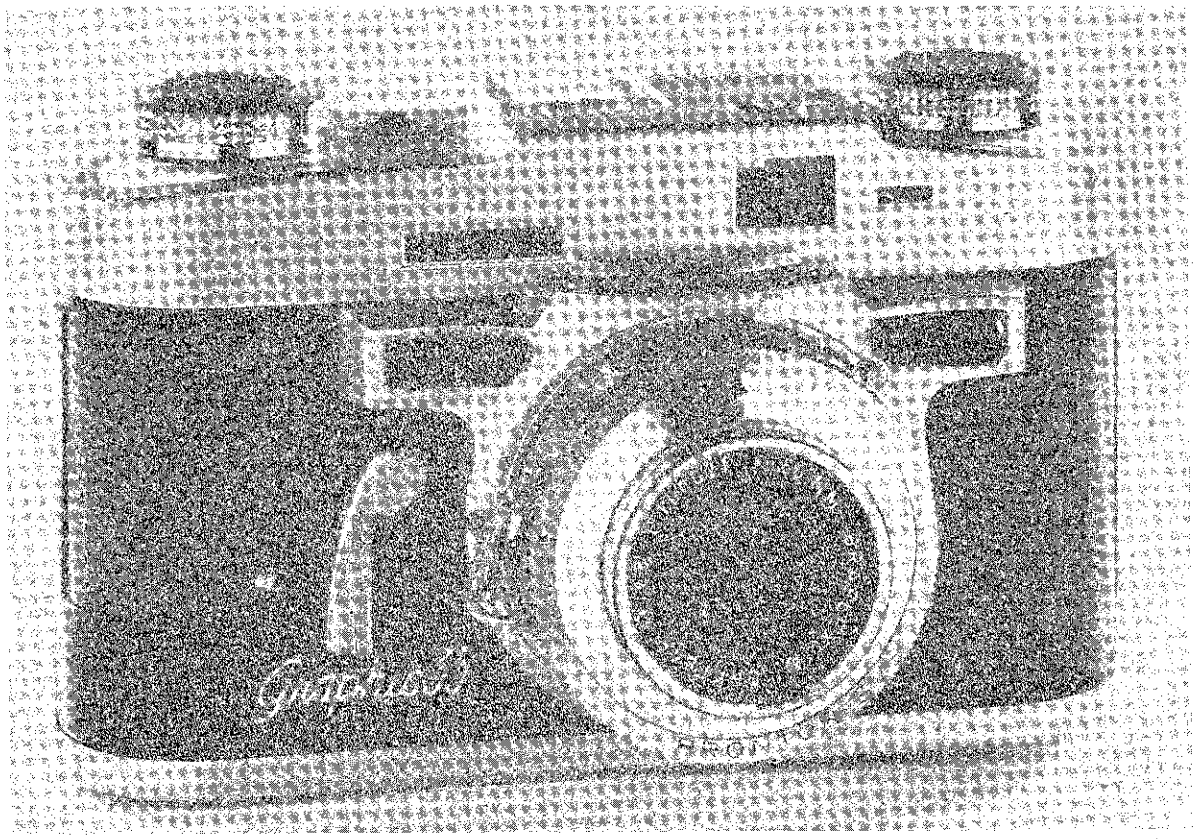
GRAPHIC(R) 35

SERVICE INSTRUCTIONS

and

PARTS CATALOG

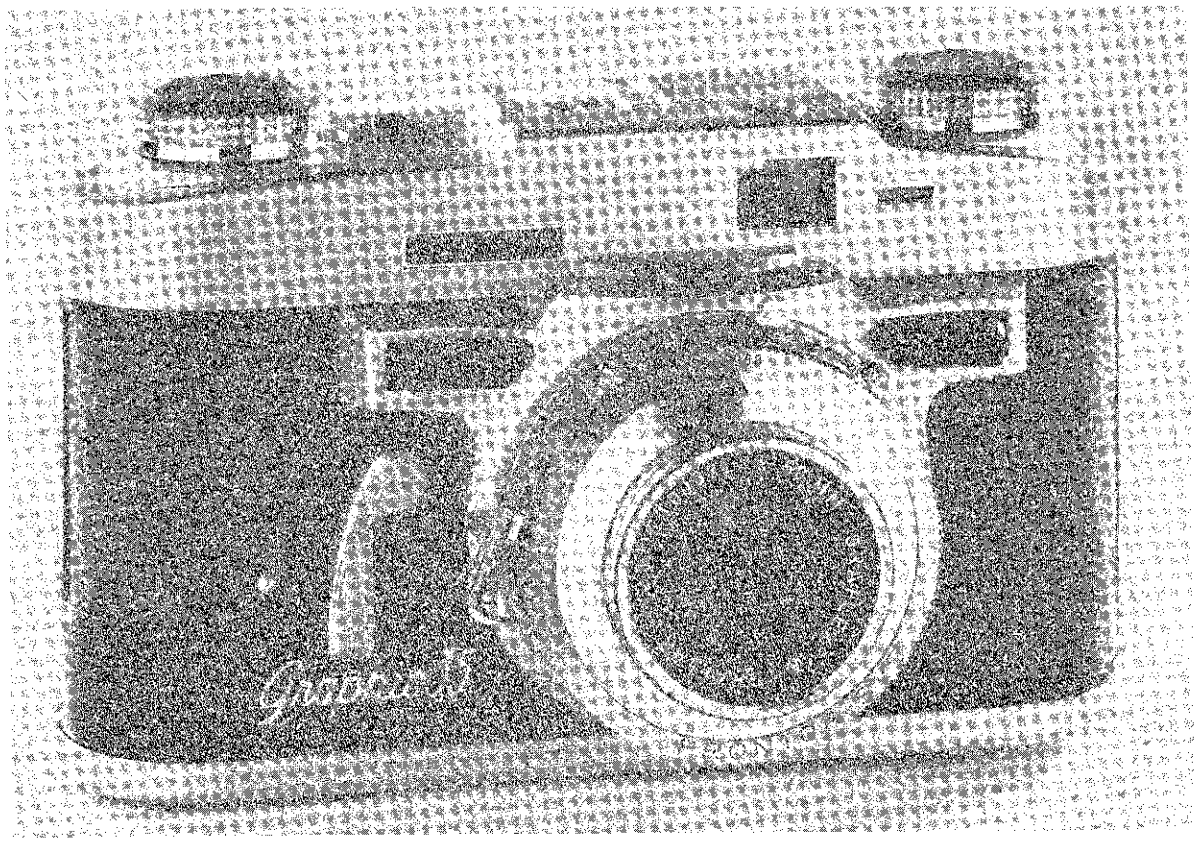


GRAPHIC(R) 35

SERVICE INSTRUCTIONS

and

PARTS CATALOG



GRAFLEX, INC.
Rochester 8, New York

193-1156
(Replaces Section 10, #1155)

Printed in U.S.A.

TABLE OF CONTENTS

Paragraph	Title	Page
1.	INTRODUCTION	1
2.	OPERATION	1
3.	INSPECTION, TROUBLES AND REMEDY	1
4.	SPECIAL TOOLS AND MATERIALS	2
4.1	Special Tools	2
4.2	Materials	3
5.	SERVICING (Localized Disassembly)	4
5.1	Top Cover Removal	4
5.2	Rangefinder and Viewfinder Disassembly	5
5.3	Film Metering and Advance Disassembly	6
5.4	Focusing System and Lens Mount Disassembly	7
5.5	Lens Mount Disassembly	8
5.6	Top Cover Disassembly	9
5.7	Back Cover Disassembly	10
6.	MODIFICATIONS	10
6.1	Shutter Wire Holes	10
6.2	Focusing System Modification	12
6.3	Release Lever Crank Modification	12
6.4	Rangefinder Mirror Mounts	12
7.	REASSEMBLY AND ADJUSTMENTS	12
7.1	Lens Mount Reassembly	12
7.2	Lens Mount Reassembly to Body	13
7.3	Focusing	13
7.4	Focusing Dial System Reassembly and Adjustment	14
7.5	Rangefinder Reassembly	15
7.6	Rangefinder Adjustment	15
7.7	Synchronizer Contact Reassembly	16
7.8	Shutter Release Mechanism Reassembly	16
7.9	Shutter Release Adjustment	18
7.10	Film Advance Mechanism Assembly	19
7.11	Film Advance-Shutter Release Interlock Adjustment	19
7.12	Top Cover Reassembly	20
7.13	Back Cover Reassembly	21

Figure	PARTS LIST	Pages
1	Camera Complete	22 - 23
2	Rangefinder and Viewfinder	24 - 25
3	Film Advance and Metering	26 - 27
4	Body Lens Mounting	28 - 29
5	Lens Mount	30 - 31
6	Top Cover	32
7	Back Cover	33

1. INTRODUCTION

This section of the Service Parts Manual covers service of the Graphic "35". The Graflex Service Sales Department policy of bringing the equipment up to current production standards is followed as far as economical in respect to the use of minor new parts and modification of major parts.

The text and illustrations cover inspection, tools, materials, disassembly, modifications, reassembly, and adjustments. Exploded views in the text and Parts Catalog are numbered in disassembly order.

2. OPERATION

The Graphic "35" will accept standard 20 or 36 exposure, 35mm film cartridges, black and white or color. The negative size is 1" x 1-1/2" (24x36mm).

The Graphic "35" features push-button focusing. Pressure on the push buttons actuate the lens coupled, split field rangefinder and the focusing scale. The focusing scale is color coded to conform with color coding on the shutter assembly to act as a guide for indoor flash photography. The focusing scale range is 3 feet to infinity and indicates depth of field directly.

The film advance and shutter release mechanism is designed to prevent double exposure by preventing the body release from operating until the shutter has been cocked and film wound.

3. INSPECTION AND TROUBLES

Table I of potential troubles, causes and remedies is supplied so that difficulties may be prompty recognized and proper steps taken to overcome them. Before disassembly, inspect the camera for obvious indications of trouble, causes such as loose or missing screws and sliding surfaces that are binding because of lack of lubrication.

TABLE I

TROUBLE	CAUSES	REMEDY	REFERENCE
PICTURE TROUBLES:			
Out of focus	Lens focus maladjusted	Readjust	Par. 7.3
	Rangefinder not correlated with lens focus	Readjust	Par. 7.6
	Focusing dial mechanism maladjusted	Readjust	Par. 7.4
Wide space between frames	Interlock release lever maladjusted	Readjust	Par. 7.11
Double exposure preventive mechanism fails	Interlock release maladjusted	Readjust	Par. 7.11
SHUTTER TROUBLES:			
Shutter refuses to cock	Shutter release crank maladjusted	Readjust	Par. 7.11
Shutter refuses to release	Shutter release lever maladjusted	Readjust	Par. 7.11
	Shutter release crank maladjusted	Readjust	Par. 7.11
CAMERA MECHANISM TROUBLES:			
Excessive play in focusing lever	Loose pivot stud (15, fig. 6) Loose drive stud (19)	Tighten loose stud (15, fig. 6) Tighten loose stud (19) and nut (10)	Par. 7.1. c-g
	Loose bracket screws (13) Worn adjusting bracket (11)	Requires readjustment Replace bracket (11) and readjust	
Failure of automatic stop on film advance	Interlock release lever maladjusted	Readjust	Par. 7.11
	Broken transport stop spring (9, fig. 4)	Replace with sprocket (8) and dog (9A)	Par. 7.10

TOOLS

FLASH LAMP IGNITION	TROUBLES:		
Failure of flash to operate	Shutter wires not properly seated at contacts (14 and 15, fig. 2) or (18 and 19)	Reposition wires in contacts	Par. 7.7
	Shutter wire contacts not properly seated in camera housing	Reposition contacts	Par. 7.7
	Shutter wires broken	Trace wires and check terminals. Replace if necessary	Par. 7.7 & 7.1.h.
Flashlamp fires on insertion	Insulation worn or stripped	Trace wires, replace if necessary	
	Overflow of solder on shutter terminals	Resolder wires	Par. 7.1.h.
	Shutter wire contacts not properly seated	Reposition contacts	Par. 7.7

4. SPECIAL TOOLS AND MATERIALS

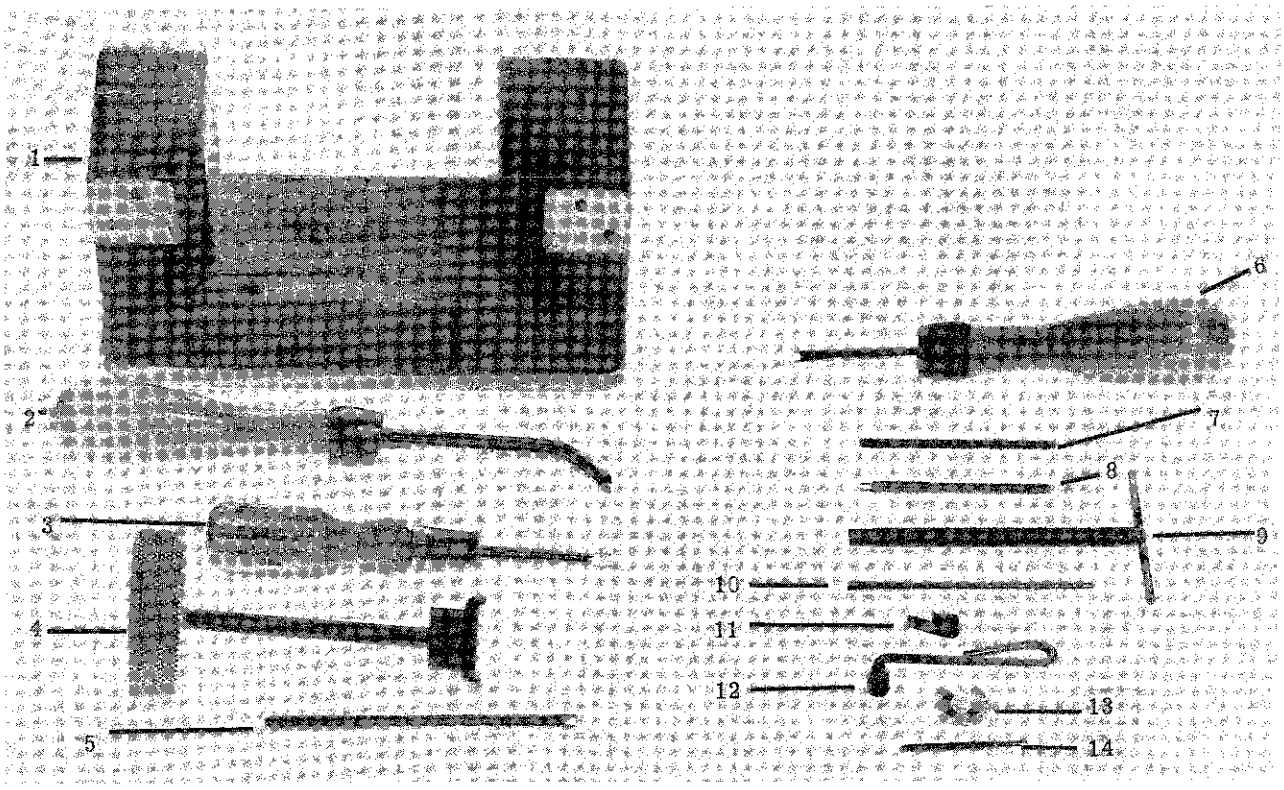


Figure 1. Special Tools

4.1. Special Tools (Figure 1).

Figure Index	Tool Part No.	Nomenclature (and Use)
1	T-35285-A	Camera Assembly Holding Block (Support camera body during general work.)
2	T-35285-F	Cover Lock Spring Adjusting Tool (Reform cover lock spring, figure 33)
3	T-35285-J	Rangefinder Actuator Adjusting Tool (figure 20)
4	T-35323-H	Shutter Jamb Nut Wrench (Remove jamb nut, 6, figure 6.)
5	T-35285-H	Cover Lock Adjustment Tool (Assembly of retaining ring, 5, figure 9.)

4.1. Special Tools (continued)

6	T-35285-L	Interlock Release Lever Adjusting Tool (figure 31).
7	T-35285-K	Shutter Release Crank Plug (Support inside end of shutter release crank for bending, par. 7.9.b.)
8	T-35278-D	Segment Pin Adjustment Tool (Adjust focus dial segment travel, figure 16).
9	T-35285-N	Interlock Release Lever Adjusting Tool (Bend large arm of interlock release lever, figure 30.)
10	T-35285-P	Drive Stud Holding Tool (Hold stud slot during tightening, figure 7.)
11	T-35285-S	Focusing Dial Retaining Clip (Holds pinion and dial in mesh with gear segments, figure 17.)
12	T-35285-T	Drive Stud Nut Wrench (Secures nut to drive stud.)
13	T-35285-Z	Dial (Cut out blank area between "∞" and "3.") (Facilitate adjustment of gear segment pin.)
14	T-35301-62A(8)	Pin Driver (Assemble gear segment stud, etc, figure 12.)

4.2. Materials - Lubricants, Solvents and Adhesives.

Compound	U.S. Specification	Manufacturer	Use
Lubricants -			
Dow-Corning #11 Compound or Dow Corning Silicone	-------	Dow-Corning Corp. Midland, Michigan	Lens Mount and Tube
Texas Unitemp	AN-G-25-AM2	Texas Company New York, New York	General
Solvents -			
Trichlorethylene or Carbon Tetrachloride	AN-T-37A	Eastman Kodak Co. Rochester, New York	General
Toluol	AN-T-541	Eastman Kodak Co. Rochester, New York	Lens Mount and Tube
Adhesives -			
Glyptol #1276	------ ------	General Electric Co. General Electric Co. Pittsfield, Mass.	Seal Screws
Adhesive 3M-EC-847 or 3M-EC-880	MIL-C-4003	Minnesota Mining & Mfg.Co. Detroit, Michigan	Covering
Adhesive 3M-EC-776	MIL-S-4383	Minnesota Mining & Mfg.Co. Detroit, Michigan	Seal Screws Cement glass
Cordo #2055	------	Cordo Chemical Corp. Norwalk, Connecticut	Seal Screws
Sealer 3M-EC-947	------	Minnesota Mining & Mfg.Co. Detroit, Michigan	Sealer between camera housing and lens mount
Solder 60-40		Kester	Shutter synchronization wires.

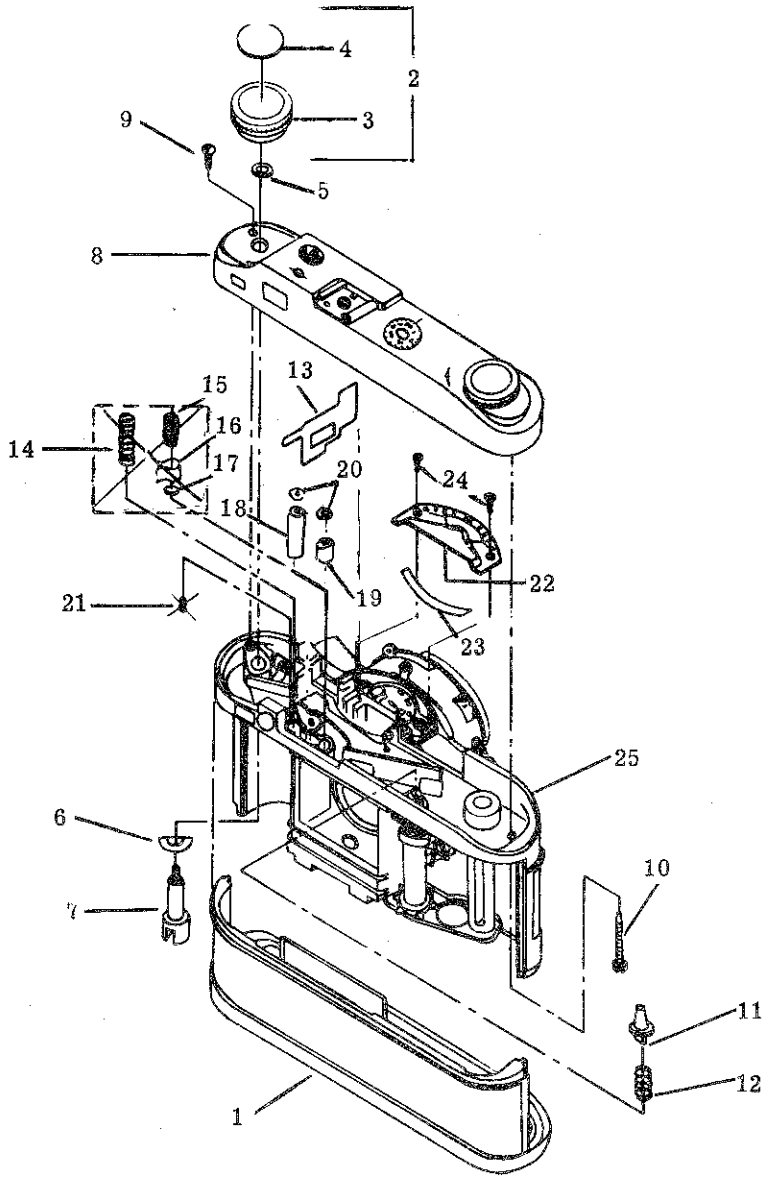


Figure 2. Camera Complete, Exploded View

5. SERVICING

The Service Instructions provide complete camera disassembly - at various points, instructions advise disassembly if necessary or, if not, skip to the next paragraph. Reassembly points out modifications and adjustments as the camera is built up.

The following table outlines minimum steps of disassembly that are required for the most common service operations. Due to interlocks between film advance and shutter release for example it will be necessary to disassemble film advance mechanism to remove the shutter mounting.

5.1. Top Cover Removal

a. Remove the back cover assembly (1, figure 2) by turning the lock on the bottom of the cover counterclockwise. Slide the cover down and out from the camera.

b. Hold the rewind knob shaft (7) securely with a flat object in the slot of the shaft. Turn the knurled rewind knob (2) counterclockwise to remove. Remove the shaft (7), spring washer (6) and flat washer (5).

c. Remove the two cover screws (9) and (10). To remove the inside screw (10) it will be necessary to remove take-up shaft (4, figure 4) and its parts by removing plate (1) and screws (2). These parts can be replaced if their disassembly is not necessary later. Carefully raise and remove the top cover assembly (8, figure 2).

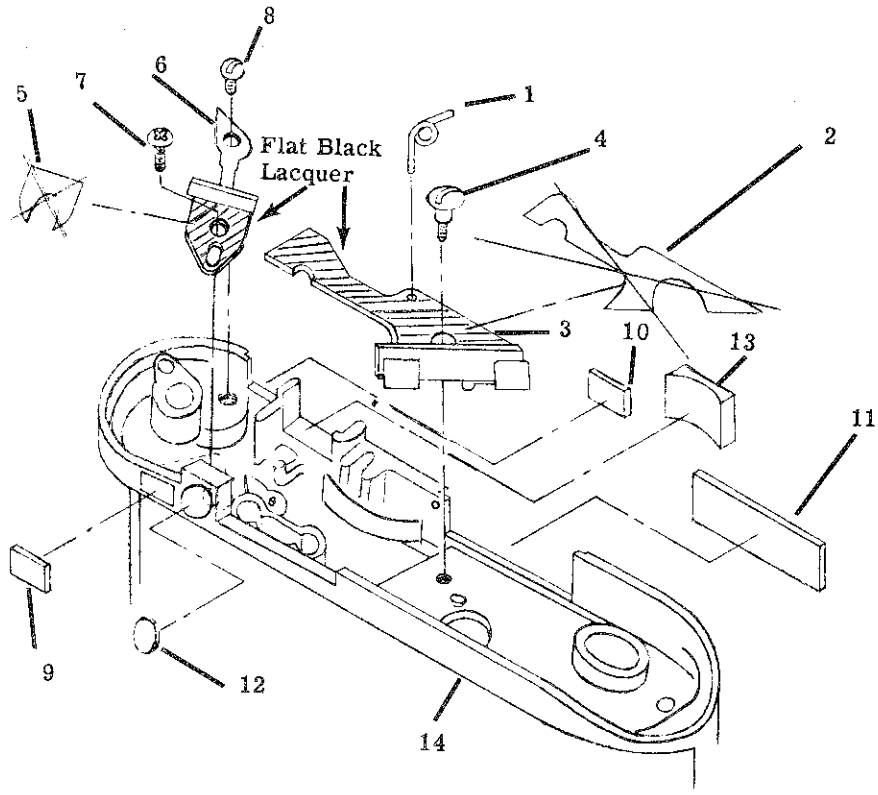


Figure 3. Rangefinder and Viewfinder, Exploded View

d. From the camera body assembly (25), remove the counter dial shaft (11), spring (12), and viewfinder mask (13). On earlier model cameras, remove the contact springs (14) and (15). Remove the contact insulator (16) and the insulator plug (17). On current model cameras, remove washers (20) and contact plugs (18) and (19); the shutter wires are not soldered to the camera body contacts and can be removed easily.

e. If necessary, remove the lens mount cover (22) and retaining spring (23) by removing the two screws (24).

5.2. Rangefinder and Viewfinder Disassembly (Figure 3).

NOTE: Do not disassemble unless necessary to replace parts. Adjust without disassembly.

a. If necessary, remove viewfinder lenses (12 and 13, figure 3) and optical glass (9), (10) and (11).

b. Remove the rangefinder spring (1).

c. Remove screws (4), (7) and (8). Lift the fixed mirror assembly (6) and the triangulating mirror assembly (3) from the body assembly (14).

NOTE: The screws (4), (7) and (8) are cemented. Remove as much cement as possible before attempting to loosen the screws.

d. On early models; felt masks (2 and 5) were used; these have been replaced by flat black lacquer.

e. Remove as much cement as possible from all parts. Take special care in handling the mirror assemblies (3) and (6) to prevent marring the silvered surface.

GRAPHIC 35

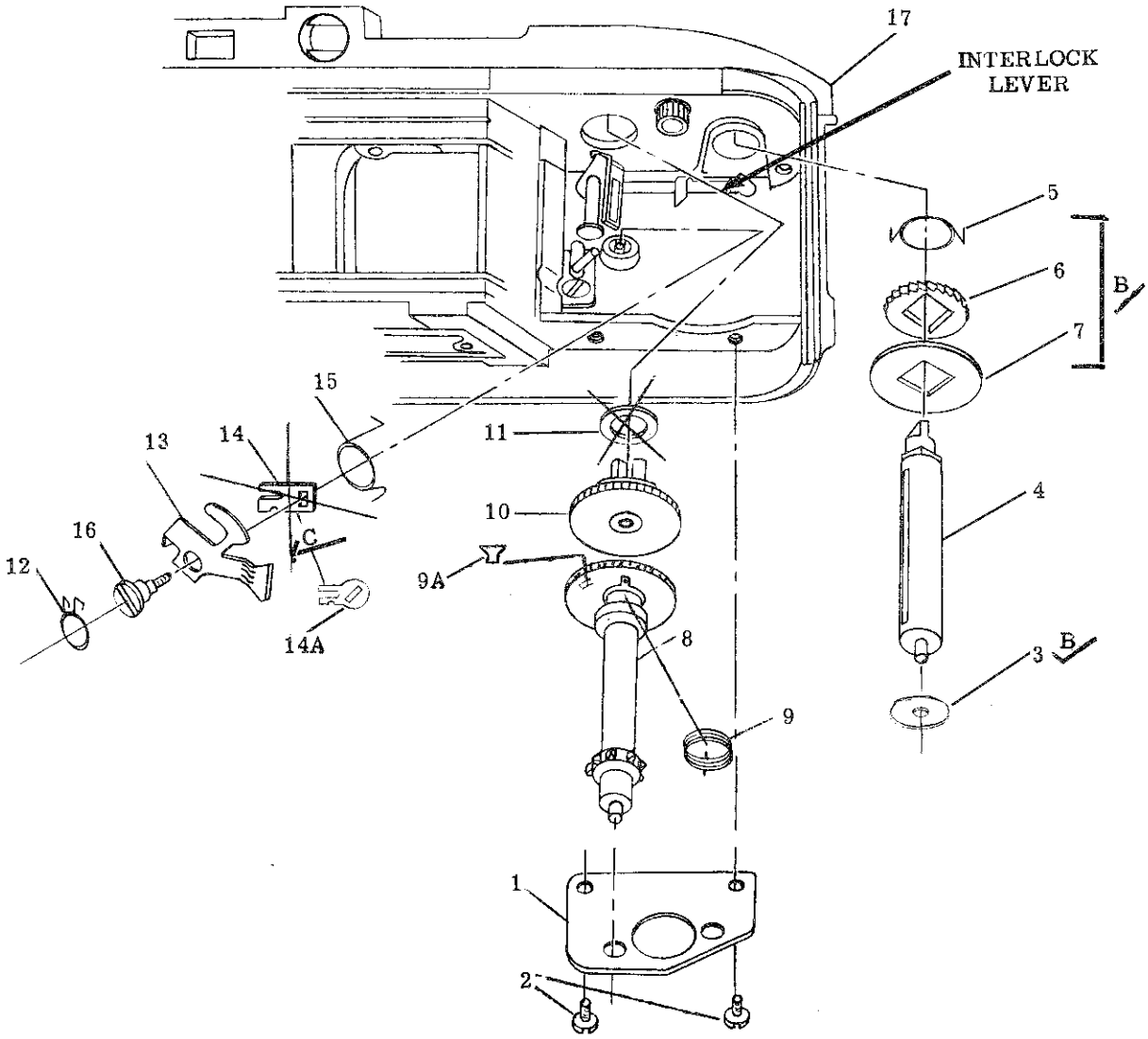


Figure 4. Film Metering and Advance, Exploded View

5.3. Film Metering and Advance Disassembly (Figure 4).

a. Remove two screws (2) and remove plate (1).

b. Remove the take-up spool washer (3) (used on later models) from the spool (4). Slide the spring (5) from the spool (4). Remove the ratchet (6) and guide (7).

c. To remove the sprocket shaft assembly (8) pull the interlock lever (see figure 4) away from the top of the camera with a small screw driver and with the counter adapter assembly (10) tight against the top, juggle the sprocket shaft (8) from the adapter (10).On later models a metering dog (9A) will fall out of the sprocket shaft gear. Early models used a transport stop spring (9) around the sprocket shaft (8); replace with latest sprocket and dog. Follow by removing the adapter assembly (10) and washer (11). Washer (11) is not used on later models having metering dog, and it may be eliminated upon reassembly of any model.

NOTE: To remove the lens mount without removing disassembly of interlock section (11 thru 15), unhook lower end of interlock release lever crank spring (12). Loosen screw (16) enough so that the interlock release lever (13) can be lifted enough to allow the shutter release crank to swing vertical and out through the slot in the camera body.

d. Release tension on springs (12 and 15). Remove screw (16) and follow with spring (12), interlock release lever (13), interlock release lever crank (14 or 14A) and spring (15).

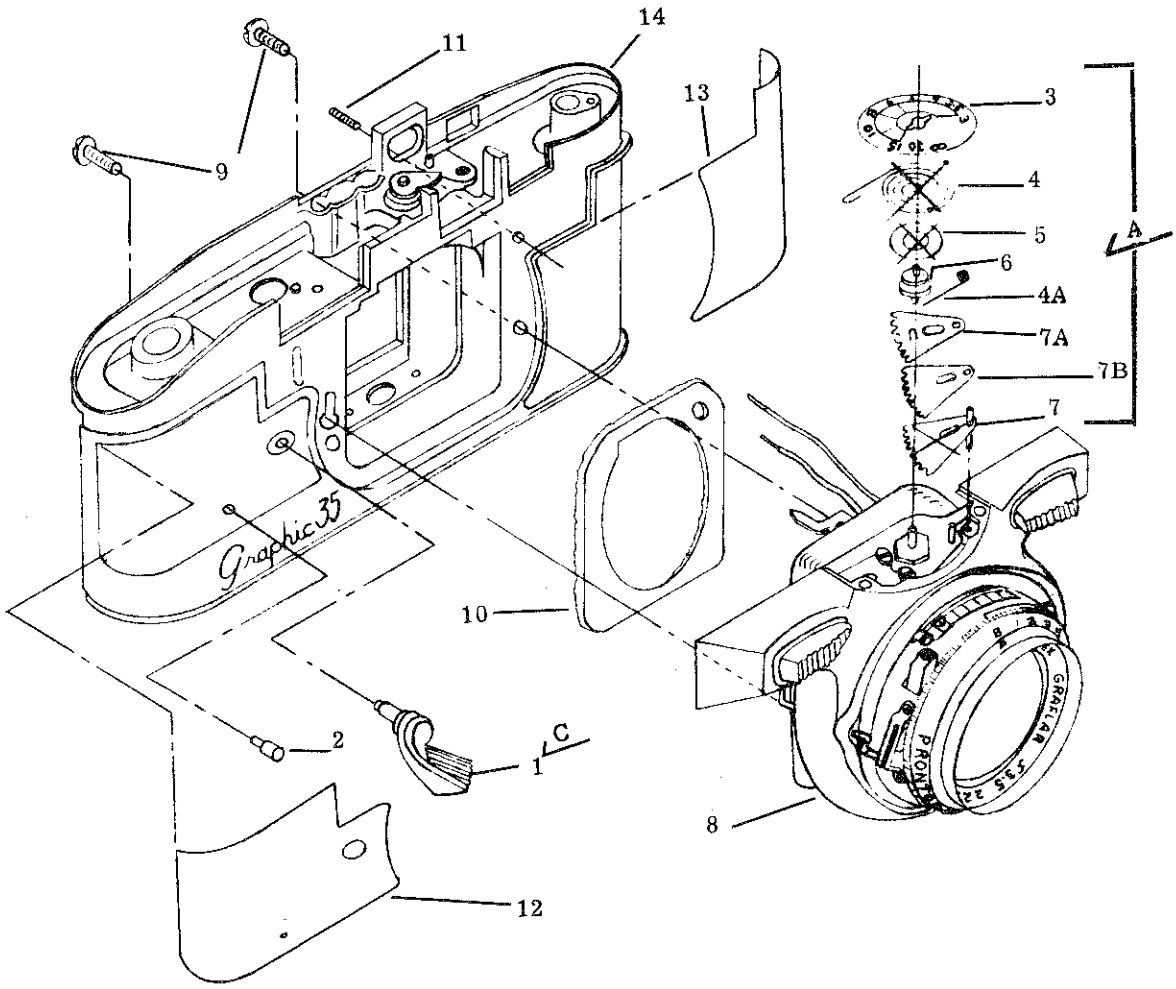


Figure 5. Lens Mounting and Focus, Exploded View

5.4. Focusing System and Lens Mount Disassembly (Figure 5).

a. If necessary, shutter release lever (1) may be removed by pulling straight out if the interlock section (12 thru 16, figure 4) has been removed (par. 5.3.c.).

NOTE: Early models have release lever with 0.138" diameter shaft; replace with current lever having 0.203" diameter shaft. Drill out hole with 0.204" diameter (#6) drill, see paragraph 6.3.

b. Shutter release lever stop (2) is riveted - if necessary, drill out peaned end and remove.

c. Early model. Focusing dial assembly consisting of dial (3), spring (4), washer (5) and pinion (6) and segment (7) should be replaced - lift out parts with tweezers.

NOTE: When modifying the focusing scale, it will be necessary to remove and disassemble the lens mount (8) to change the focusing arm.

d. Current model. Lift out focusing dial (3) and pinion (6) with a tweezer. If necessary, unhook segment spring (4A) from upper segment (7A) and use a small screwdriver to pry carefully from its stud. Remove upper segment (7A) and lower segment (7B).

e. Lens mount (8) is secured by two machine screws (9). Also, on the shutter, remove the lower screw of the shutter release guard. Align the shutter release crank with the body slot and slide the lens mount assembly (8) from the camera body. Care must be taken to feed out the shutter wires; on early models using insulator tube (21, figure 2), it is easier to cut the shutter wires and replace, paragraph 7.1.h.

f. Stop screw (11), used to adjust the 3 feet focus, may be removed if necessary.

g. Coverings (12 and 13) can be replaced if they are stripped off and the old cement removed with toluol.

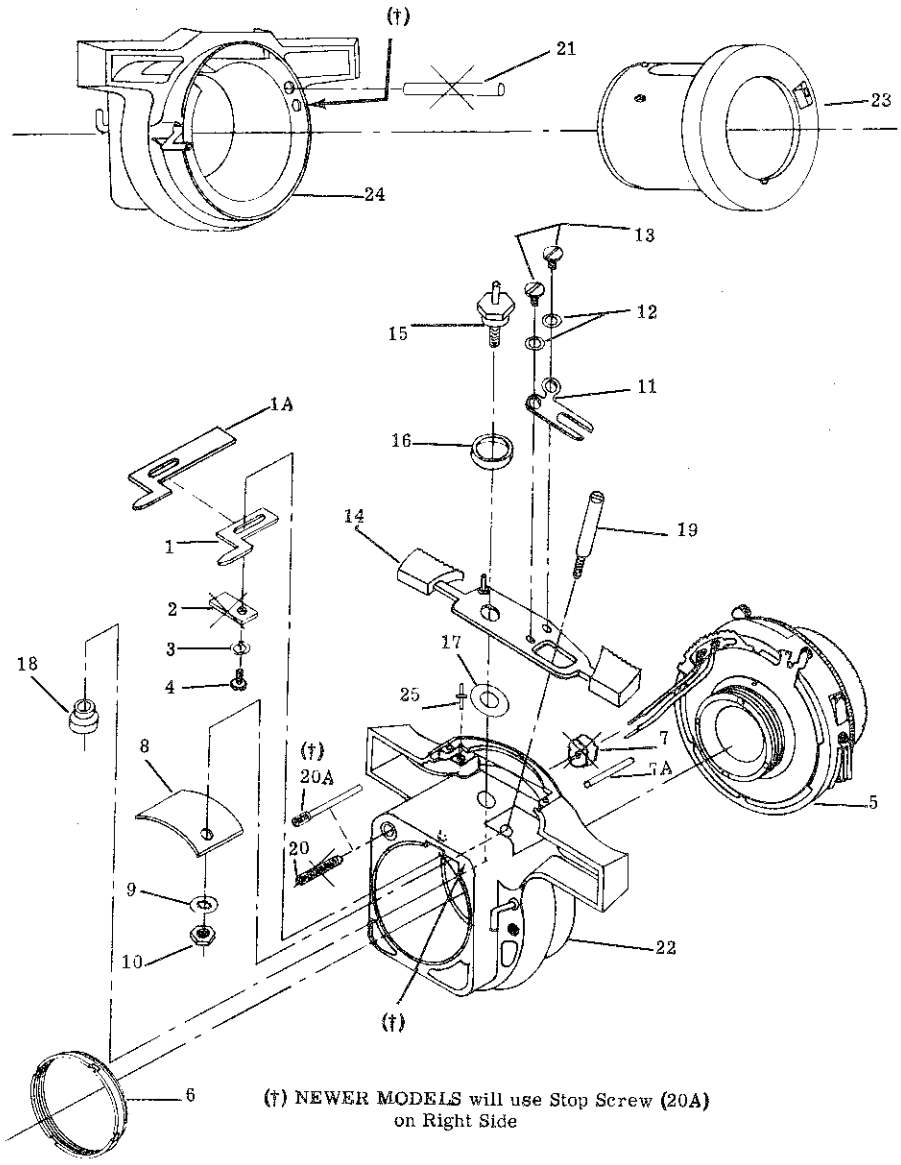


Figure 6. Lens Mount, Exploded View

5.5. Lens Mount Disassembly (Figure 6).

a. The actuator (1 or 1A) is secured by machine screw (4) and washer (3). Early models will use the small actuator, (1) in internal-tooth lock washer (3) and will use shutter wire retainer (2); the retainer can be discarded when new holes are drilled for the shutter wires as instructed in paragraph 6.1. Intermediate models will use the small actuator (1), but not retainer (2) since the shutter wires do not pass through the lens mount tube (24). Current models having a wide keyway in lens mount tube (24) will use large actuator (1A).

b. Lens and shutter assembly (5) is removed by unscrewing the jamb nut (6) with shutter jamb nut wrench (4, figure 1). Slide the shutter from the lens mounting tube (23). On early models, care must be taken when pulling the wires through the light seal (7); plug this hole with sealing compound (3M-EC-947) and drill new holes for shutter wires, paragraph 6.1. Slide the seal (7 or 7A) from the shutter wires.

c. Fit special holding tool (10, figure 1 and figure 7) or small screw driver blade into slot of driving stud (19) and remove the nut (10) and lockwasher (9) with special hex wrench (12, figure 1). On early intermediate models, remove the lens tube shield (8) used with the small actuator (1).

d. The adjusting bracket (11) secured by screws (13) and washers (12) may be removed if necessary.

e. The pivot stud (15) is unscrewed with a 1/4 inch socket wrench. Due to a knurl shoulder on bushing (18), it is convenient to use the pin driver (14, figure 1) set over the pivot stud and gently tap the bushing free. Flat nylon washer (16) will also be freed.

f. To remove the driving stud (19), slide the focusing arm (14) to the left and twist the lens mounting tube (23) - the driving stud (19) can now be removed with a screwdriver and the focusing arm (14) and its washer (17) will slide out.

g. Slide the lens mounting tube (23) from the lens mount (24). If necessary, remove infinity stop screw (20 or 20A). On early models, a 1/2 inch set screw is used with a stop rod (21); these parts are obsolete and replaced by a special long dog screw (20A).

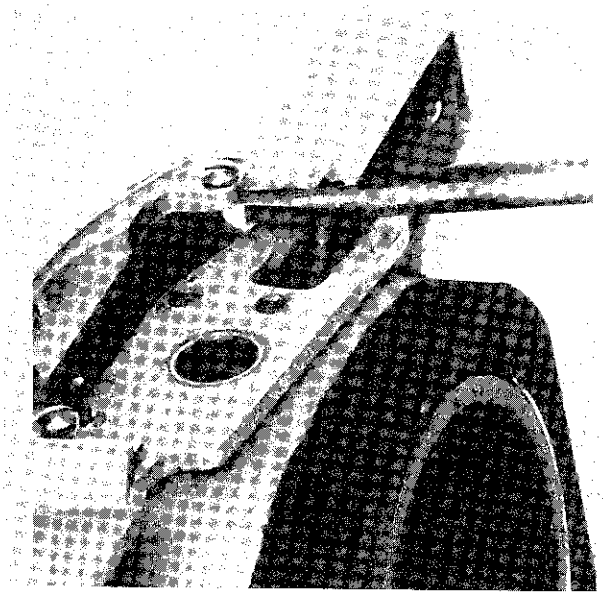


Figure 7. Drive Stud Holding Tool

5.6. Top Cover Disassembly (Figure 8).

a. Hold the take-up shaft (1) securely with a flat object in the slot of the shaft. Turn the knurled take-up knob (3) counterclockwise to remove. Remove the shaft (1) and spring (2).

b. Remove the knob spring sleeve (5) by separating the ends and raising the sleeve from the bushing. The spring (6) is removed by pulling the looped end of the spring out and spiraling the spring from the bushing.

c. Do not remove the medallion (7) unless for replacement. The medallion is secured to the cover (9) by the two lugs bent against the inside of the cover.

d. On later models, a neoprene pad (8) is cemented inside, above the viewfinder eyepiece window to support the cover, remove if necessary.

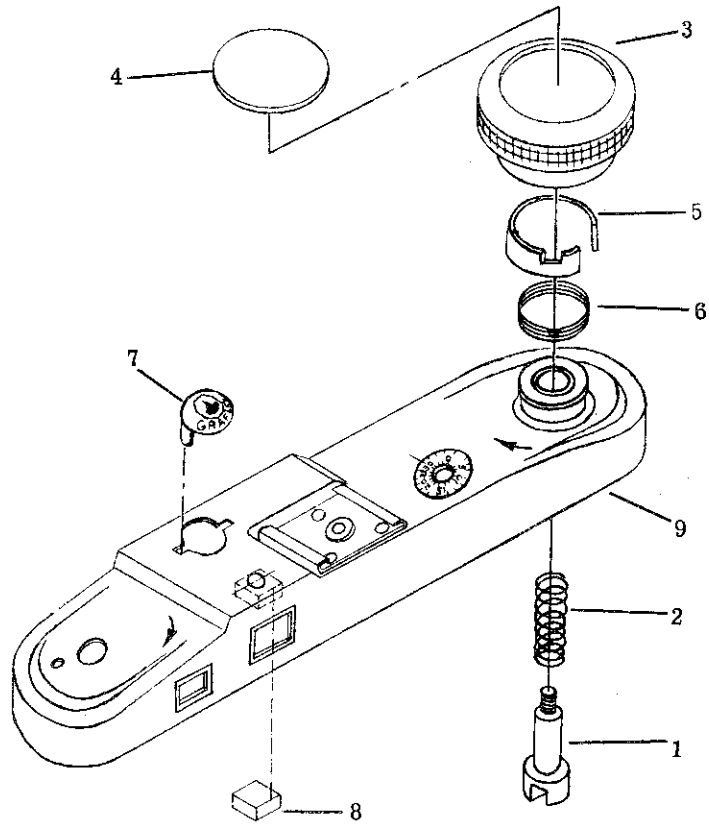


Figure 8. Top Cover, Exploded View

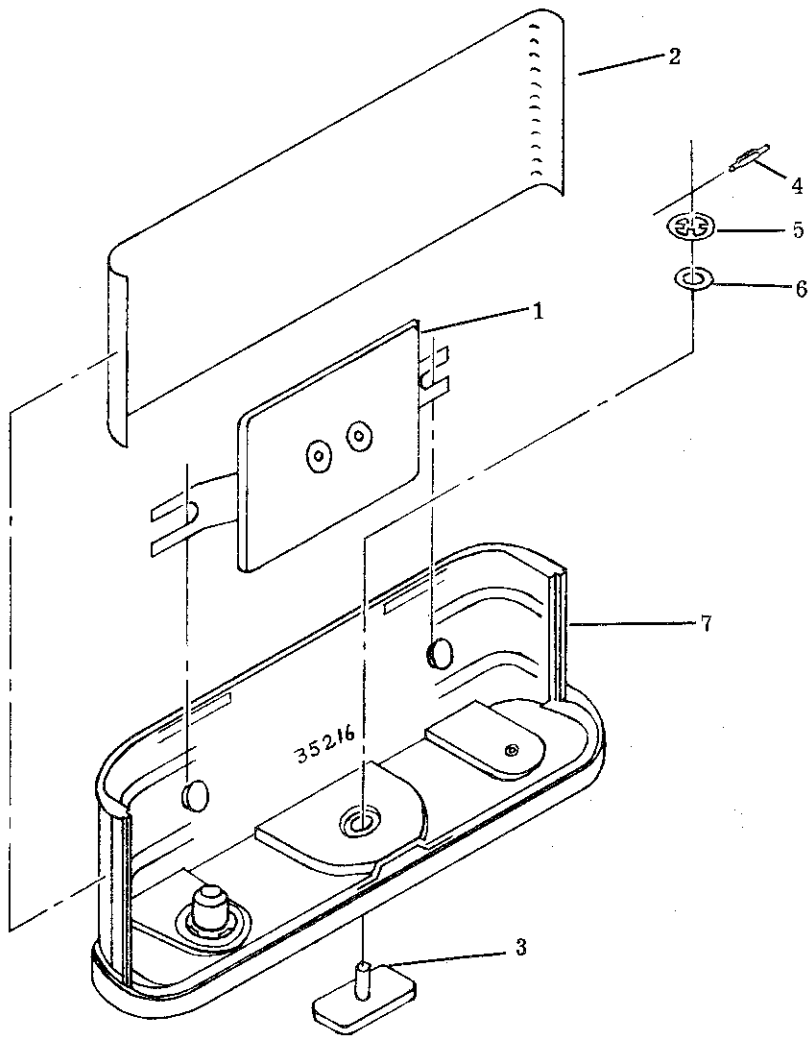


Figure 9. Back Cover, Exploded View

5.7. Back Cover Disassembly

a. Remove the pad assembly (1 figure 9) by simultaneously pulling out on one side of the pad and pressing down on the spring arm.

NOTE: Do not remove the lock lever (3) unless necessary for replacement.

b. To remove the lock lever (3), drive the cross pin (4) from the end of the lock lever and gently pry the retaining ring (5) from the lever by lifting the edges gradually with a small screwdriver. Remove washer (6).

6. MODIFICATIONS

Modifications are listed in the order that they occur when reassemblying the camera body.

6.1. Shutter Wire Holes.

a. Lens Mount Tube (23, figure 6). Use a #35 drill (.110" diam.) and drill a hole in each end of the flat area (figure 10). File out the center to make a rectangular hole. Use sealer (3M-EC-947) and plug the old shutter wire hole that runs to the inside of the tube.

b. Lens Mount Assembly (22, figure 6).

1. Assemble the lens mounting tube (23) and outline the hole that was drilled and filed above. About 5/64 inch from the bottom of the outline, spot and drill a hole 11/64 inch diameter as illustrated in figures 10 and 11 to the outside of the mount.

2. Segment Pivot Stud (25, figure 6) must be assembled in the hole used by the early style focusing segment. This hole may be .0465 inch diameter. Check with #51 drill and if not, it should be drilled to .0465 inch (plus or minus 0.001) diameter. Use pin driver (14, figure 1) and set the stud (figure 12).

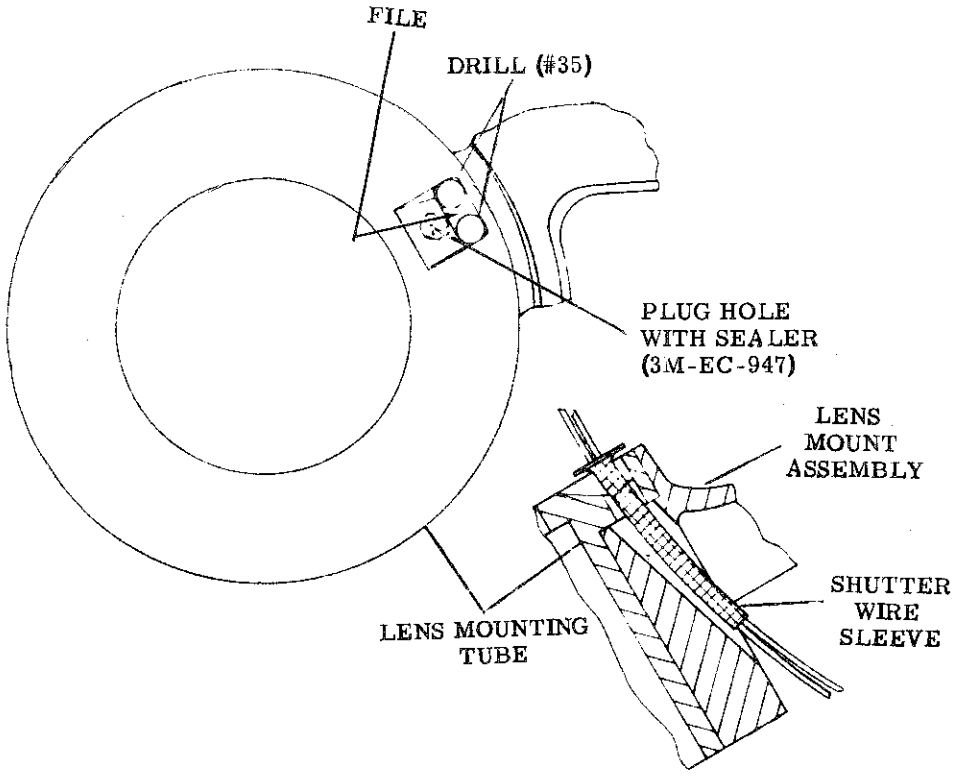


Figure 10. Shutter Wire Hole Modification

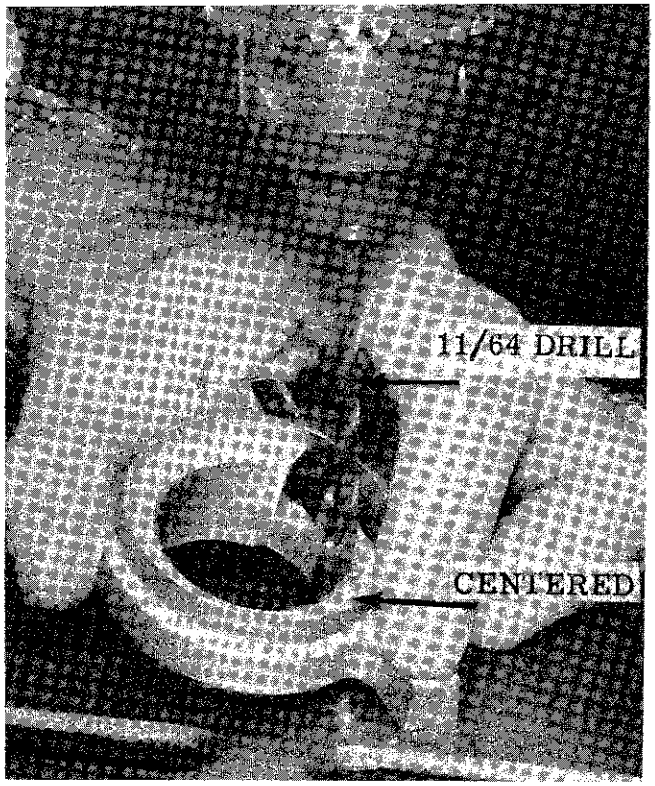


Figure 11. Drilling Lens Mount Assembly for Shutter Wires

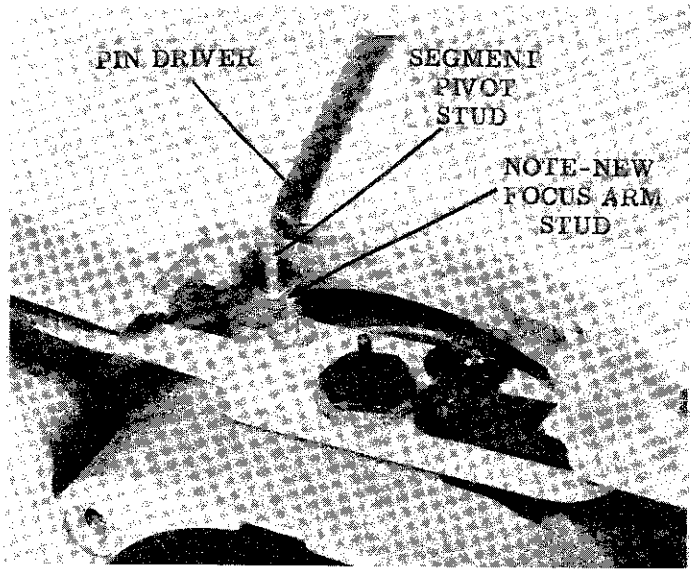


Figure 12. Segment Pivot Stud Assembly

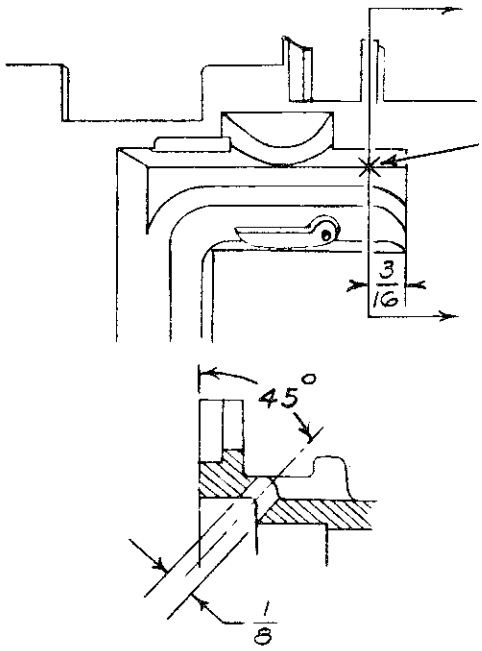


Figure 13. Shutter Wire Hole Location in Body.

c. Body (13, figure 4). Locate a hole in the front as shown on figure 13 and use a 1/8 inch diameter (or #30) drill to drill the hole. Use sealer (3M-EC-947) and plug the old wire hole that is located near the rangefinder actuator cam.

6.2. Focusing System Modification

a. In disassembly of an early model, the focusing dial (3, figure 5) was removed assembled to the spring (4), washer (5) and pinion (6) . . . discard all of these parts. Also discard the sector gear assembly (7) and the focusing arm assembly (14, figure 6) if it does not have hexagonal shoulder on focus arm stud. (figure 12).

b. Assemble segment pivot stud as instructed in paragraph 6.1.b.(2).

6.3. Release Lever Crank Modification:

a. If the interlock release lever crank (14, figure 4) is replaced with crank (14A), it will be necessary to replace the release lever (1, figure 5) due to the larger rectangular crank slot.

b. Enlarge the release lever hole in the body using a 13/64 inch drill . . . block the body casting on the film guides on the drill press table to be assured of a perpendicular hole.

6.4. Rangefinder Mirror Mounts.

On early models, black flocked masks (2 and 5, figure 3) were cemented to mirror mounts (3 and 6). These are no longer used; paint area with flat black lacquer.

NOTE: Do not paint surface of movable mirror mount (3) around head of mounting screw (4).

7. REASSEMBLY AND ADJUSTMENTS

7.1. Lens Mount Reassembly (figure 6).

a. Clean the lens mounting tube (23) and the lens mount (24) with toluol. Lubricate the sliding tube surface with grease (Dow #11) and slide together with the cut-out slot on the tube facing up, into the mount assembly.

b. Lubricate the washer (17) with Unitemp and position over the hole on the top of the mount assembly (22). Lubricate the bottom surface of the focusing arm assembly (14) with Unitemp and place over the washer (17) with the finger grips of the arm assembly extending through the openings in the wing sections of the mount assembly (22).

c. To position the driving stud (19) turn the lens mounting tube (23) counter-clockwise (viewing from the rear of the mount) until the driving stud can be screwed into the sleeve of the lens mounting tube.

d. Turn the lens mounting tube clockwise until the cut-out on top of the sleeve and the hole at the top of the mount assembly are aligned. From inside the lens mount tube place the bushing (18) in the cut-out of the sleeve and press the bearing into the hole of the mount assembly.

e. Align the focusing arm assembly (14) and the washer (17) with the hole on the mount assembly. Place the washer (16) on the collar of the pivot stud (15). Apply a small amount of EC-776 cement to the thre of the stud. Secure the focusing arm assembly with the assembled pivot stud. Use a 1/4 inch socket wrench.

CAUTION: When tightening the pivot stud (15) be careful not to burr the head. Use a socket type wrench, not pliers.

f. Place the adjusting bracket (11) on the focusing arm assembly (14) with the forked end surrounding the driving stud (19). Lubricate the edges of the fork with Unitemp. Secure the bracket with two washers (12) and screws (13). Do not tighten these screws.

g. On early models place the lens tube shield (8) inside the lens mount tube with the mounting hole of the shield in position over the drive stud (19) and the shield covering the focusing arm pivot bushing (18). Secure the shield with the lock washer (9) and the #3-56NF-2 nut (10) using the special socket wrench (12, figure 1) and the drive stud holding tool (7, figures 1 and 7). Later models do not use the lens tube shield (8), secure driving stud with lock washer (9) and #3-56NF-2 nut.

h. If necessary, solder new wires to the back of the shutter assembly (5) as described below.

1) Use a 25-40 watt soldering iron with 1/8 inch tip. On early models having coil spring contacts (14 thru 17, figure 2) in the top of the camera, it is advisable to replace the shutter wires (Gauthier parts

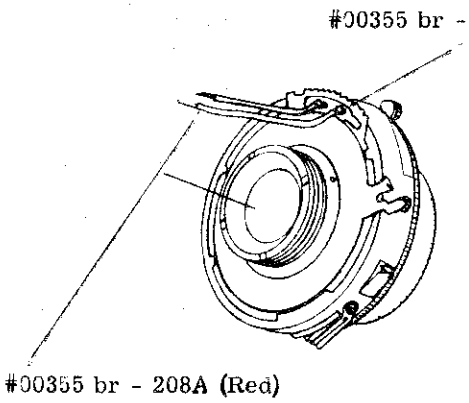


Figure 14. Shutter Wires

#00355br-208 (Black) and #00355br-208A (Red) and contact plugs and washers (18 thru 20, figure 2).

2) Carefully unsolder the old wires from the shutter case terminal holes. Use a #72 (0.025 inch diameter) drill in a pin vise to clean solder from the terminal holes.

3) Remove about 1/8 inch of insulation from new wires and twist the wire strands together and tin-care must be used to avoid burning the plastic insulation.

4) Insert the wire in its terminal hole (figure 14) and solder - if the tinning solder does not hold, add more, but do not allow it to overflow and cause a short on the synchronizing disc lever.

i. Assuming that the shutter wire holes have been modified as in paragraph 6.1, proceed as follows. Flare one end of the shutter wire sleeve (7A, figure 6) using a pencil point. Insert the shutter wires into the sleeve and feed the wires and sleeve into the lens tube and mount assembly (22). Be sure the shutter release crank is turned to line up between the shutter's release lever and guard. Replace the shutter jamb nut (6) - start with a small screw driver and then tighten with lens wrench (4, figure 1).

j. On early models having a narrow key way in the lens tube, use the small actuator (1, figure 6); on later models having a wide keyway in the lenstube, use the large actuator (1A) that also acts as a light seal over the lens tube bushing. Secure either actuator with flat washer (3) and 1/8 inch #2-56 round head machine screw (6).

k. On early models the lens tube spacer (21) and the 3/8 inch set screw (20) are replaced by the current special set screw (20A). Assemble now for adjustment later.

7.2. Lens Mount Reassembly to Body (figure 5).

a. If body covering (12 or 13) is to be replaced, remove the old cement from the body casting with toluol. The new covering is supplied with cement precoated . . . . reactivate this cement with toluol and press into place.

b. Position shutter release lever stop (2) into body and secure by peening inside.

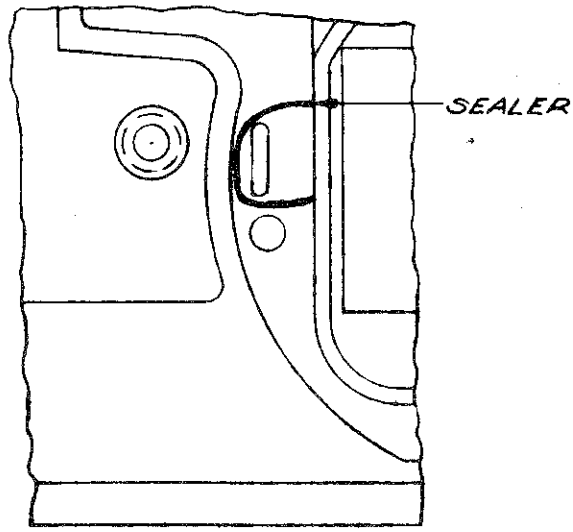


Figure 15. Shutter Release Crank Light Seal

c. Roll a ribbon of sealer EC-947 and place it around the hole in the camera body through which the shutter release crank passes (figure 15).

d. Position the light seal (10, figure 5) in the front of the camera body so that the notch in the inside diameter will fall on the side of the infinity set screw (20A, figure 6) in lens mount assembly.

NOTE: If the latest type seal is used with an infinity screw on the left side, it may be necessary to cut the notch a bit on the top side to have unobstructed access to the screw.

e. Align the end of the shutter release crank with the hole in the camera body and slide the lens mount assembly into the body. Secure the mount assembly with two screws (9, figure 5).

f. Insert the set screw (11) and make the lens and focusing arm operation check or adjustment.

7.3. Focusing.

a. Focus Infinity (∞) and 3 Feet. Use fine ground glass (about 1-1/4 inch wide x 1-1/2 inch long with 1/4 inch, 45 degree bevel, cut off each top corner) and at least a 7X magnifier.

b. Infinity focus is accomplished by loosening adjusting bracket screws (13, figure 6) and pressing the shutter back. Hold the shutter open (at full aperture) by using bulb (B) exposure and a Kodak TBI cable release. View the magnified ground glass image and sharpen the image by adjusting the threaded lens tube stop (20A, figure 6). Insert a small screw driver through the cutoff corner of the ground glass.

NOTE: Infinity target may be setup in a collimator or some object at a distance of at least 500 feet.

c. Hold the shutter back against the infinity stop and tighten the adjusting bracket (11, figure 6) so that it holds the driving stud (19) to the back.

d. The 3 feet focus (target to film plane) is accomplished by holding the left button of the focusing arm (14) to the back. View the magnified image and sharpen by adjusting the stop screw (11, figure 5).

e. When adjustment is satisfactory, seal the two set screws and bracket screws with cement (3M-EC-776)-a small quantity on or around each head.

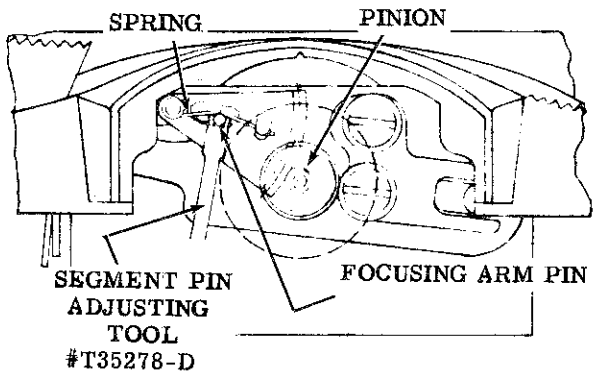


Figure 16. Focusing Segment Gear Adjustment

7.4. Focusing Dial System Reassembly and Adjustment.

a. Position the lower segment gear (7B, figure 5) so that it pivots on sector gear stud (25, figure 6) and moves back and forth by the focusing arm stud. Push back as far as possible to the infinity position - the lower sector should come within about 1/64 inch of the lens mount casting (figure 16). To adjust this, bend the focusing arm stud slightly with the pin driver (12, figure 1).

b. Position the upper segment gear (7A, figure 5) directly over the lower segment (7B).

c. Assemble the segment spring (4A), straight terminal down and parallel with the back edge of the segments. Press the spring down over the sector gear stud with the pin driver. Use a tweezers to hook the spring in front of the focusing arm pin and behind the upper segment gear tab (figure 16). Pressure of this spring should throw the segment gear out of alignment - this will eliminate backlash when the focusing dial and its pinion are assembled.

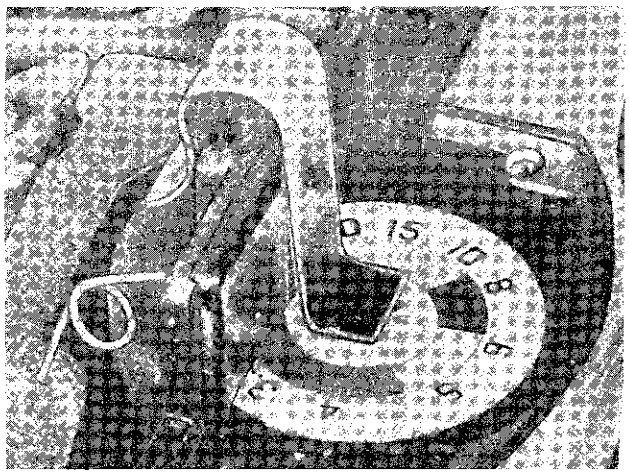


Figure 17. Focusing Dial Retaining Clip

d. Hold the sector gear teeth in alignment with a thin blade screwdriver and assemble the dial pinion (6, figure 5). Use the focusing dial retaining clip (11, figure 1 and figure 17) to keep the pinion in mesh with the sector gears.

e. Focusing dial travel, controlled by the sector gear movement, is checked and adjusted with a cut out dial (13, figure 1) and either the segment pin adjusting tool (8) or the pin driver (14). Position the cutout dial over the pinion so that the infinity mark (∞) lines up with the casting index. Press the dial on the pinion and use the focusing dial retaining clip (figure 17) to keep the pinion in mesh with the sector gears. Move the focusing arm to rotate the cutout dial to the "3" feet mark. If the "3" feet does not center on the casting index, it will be necessary to bend the focusing arm segment pin.

1) If "3" (feet) is short, bend the pin away from the focusing dial to increase rotation.

2) If "3" (feet) passes the index, bend the pin toward the focusing dial to decrease rotation.

NOTE: By inserting the tool (figure 16) through the top of the segment slots, the pin will be bent on the segment radius and not to one side. By bending the pin on the radius, you will not change the dial's infinity position.

f. Move the focusing arm back and forth several times to check smooth rotation and correct indexing at each end of the movement. Readjust if necessary as in preceeding paragraph and return to infinity focus.

g. To remove the cutout dial, hold the pinion with a scribe through the slotted center of the dial and lift the edge of the dial with a tweezers.

h. Position the dial (3, figure 5) so that its infinity lines up with the casting index and press on the shoulder of pinion (6). Check "3" feet focus and if satisfactory, seal the dial to the pinion with Cordo #2055 cement or similar cement that will have a slight solvent action on the plastic pinion.

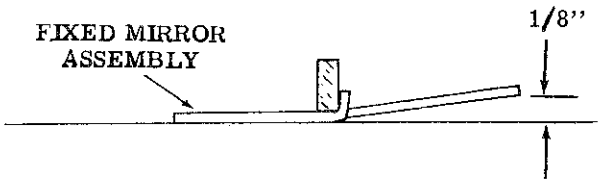


Figure 18. Forming Fixed Mirror Assembly

7.5. Rangefinder Reassembly (figure 3).

a. Thoroughly clean the mirror assembly (6) and screws (7 and 8) of all cement. Place the mirror assembly (6) on a flat surface and bend the narrow arm up approximately 1/8 inch from the surface (figure 18). To take up slack in the black shutter wire, it should be laid between the body bosses beneath the fixed mirror assembly (6). Replace in the camera body by securing the narrow arm of the mirror assembly with the slotted screw (8). Drive the Phillips head screw (7) in the opposite end until the head just touches the mirror assembly.

b. Position the fixed mirror assembly (6) on the body assembly (14) with the slot at the end of the mirror assembly positioned over the stud located in front of the rear viewfinder eyepiece. Secure with the slotted screw (8) at the end towards the camera front and the Phillips head screw (7) at the slotted end.

c. Position the triangulating mirror assembly (3) on the body assembly (14) with the mirror over the guide stud along side the counter mechanism shaft. Secure with special screw (4).

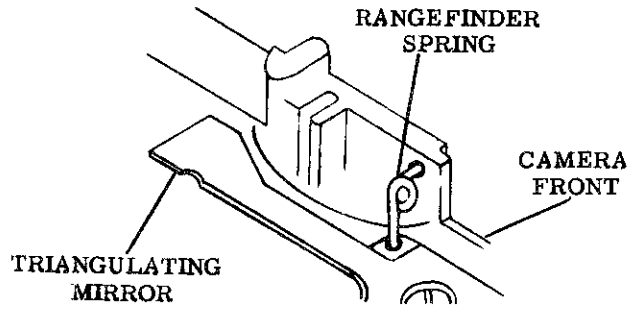


Figure 19. Rangefinder Spring Assembly

d. Mount the rangefinder spring (1) as shown in figure 19.

e. Cement the flat glass (9), (10) and (11) to their respective places on the body assembly (14) with EC-776 cement or Cordo cement.

f. Cement the front and rear viewfinder lenses (12) and (13), with their flat surfaces to the outside, with EC-776 cement or Cordo cement.

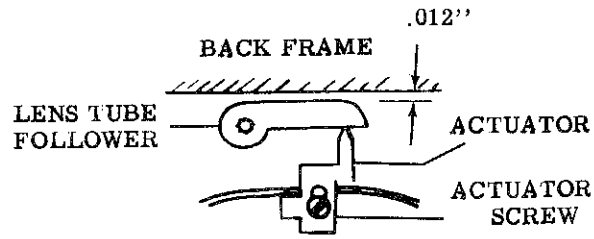


Figure 20. Actuator Infinity Adjustment

7.6. Rangefinder Adjustment.

a. Use infinity and 3 feet targets similar to those used when setting the lens focus, paragraph 7.3.a. Assuming that the lens focus is correct (par. 7.3), proceed to adjust the rangefinder as follows.

b. Push the right hand button of the focusing arm (14, figure 6), as close to the camera body as possible infinity focus. Insert a narrow shank screwdriver through the hole at the bottom of the camera body to loosen the actuator screw (4). Position the actuator (1 or 1A) with the arm approximately parallel with the lens tube (23). Slide the actuator so the actuator arm positions the lens tube follower approximately 0.012 inches from the camera back frame as illustrated in figure 20. Tighten the actuator screw (figure 20).

c. Correct the rangefinder image alignment at the infinity position as follows (figure 21).

1) Tighten the slotted screw and follow by loosening this screw very carefully, no more than 1/16 of a turn.

2) Carefully move the narrow arm of the fixed mirror assembly in the direction necessary to align the horizontal position of the target images. Tighten the screw.

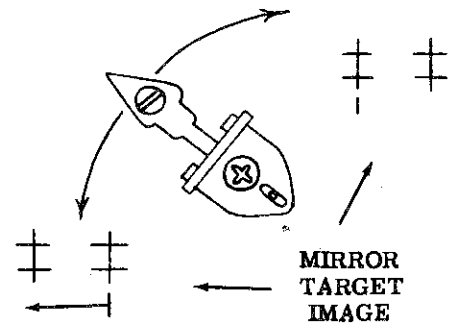


Figure 21. Rangefinder Image Alignment

GRAPHIC 35

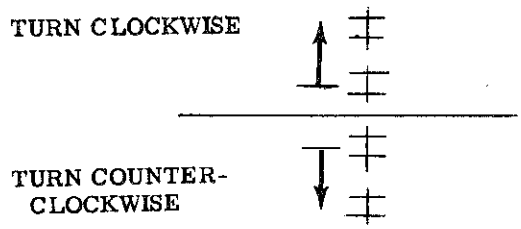


Figure 22. Vertical Image Alignment

3) Adjust the vertical position of the target images by turning the Phillips head screw in the direction necessary (figure 22).

NOTE: In most cases, the vertical adjustment will be made by turning the Phillips screw clockwise. If the screw must be turned counter-clockwise, tension may be lost in the bend of the mirror assembly and require the screw to be loosened and the end of the mirror assembly pryed up with a screwdriver to approximately 1/8 inch from the camera body.

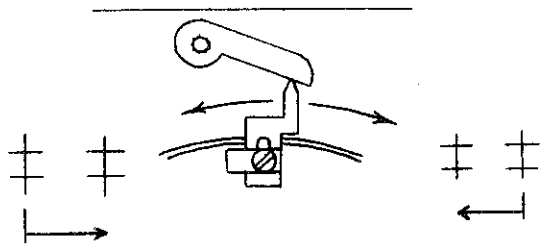


Figure 23. Actuator "3" Feet Adjustment

d. Set the camera in the 3 foot position and correct alignment as follows:

1) The vertical alignment should be correct if the adjustment described in preceeding paragraph has been made properly.

2) If the horizontal alighment is not correct bend the arm of the actuator (figure 23) in the direction necessary by inserting the actuator adjusting tool (3, figure 1) through the hole at the bottom of the camera body and straddle the arm of the actuator with the slotted end of the tool. Gently twist the tool clockwise or counter-clockwise to bend the arm. To prevent breaking the actuator arm do not bend the arm to excess.

NOTE: This adjustment might change infinity adjustment and require resetting as per paragraph c. above.

e. Check infinity and "3" feet focus several times. If the inspection proves satisfactory, cover the screw heads (7 and 8, figure 3) with Glyptol cement. Allow some of the cement to run from the screw (8) onto the camera body to secure the narrow arm of the fixed mirror assembly (6). Allow the Glyptol to run from the screw (7) to seal around the guide pin next to the screw.

7.7. Synchronization Contact Reassembly.

a. Early models used coiled contact springs and insulators (14 thru 17, figure 2); these should be replaced with rubber (tube) plugs and washers (18 thru 20).

b. The red or green shutter wire is positioned in the lower or right cavity. Tuck the wire down and under the edge of the stationary mirror mount so that it will not interfere with the moveable mirror. Thread the wire through the short plug (19) and washer (20); bend the tinned end of the shutter wire over the washer and down the side of the plug (figure 24).

c. The black wire, passing under the fixed mirror mount (figure 24), is threaded through the long plug (18) and washer (20); bend the tinned end of the shutter wire over the washer, down the side of the plug and position the plug in the left cavity.

d. Replace the rangefinder mask (13) in its slots near the center of the camera (figure 24).

e. The cover (8) may be reassembled at this time with machine screw (9) and self tapping screw (10).

NOTE: Current screw (9) is 3/16 inch long; early screw was 1/4 inch long -- either may be used, but current will be supplied on parts orders.

f. Check synchronization by tripping the shutter at a slow speed (about 1/30 second), set synchronization delay at "M" and connect continuity tester to cover shoe.

7.8. Shutter Release Mechanism Reassembly.

a. Perform the release lever hole modification as per paragraph 6.3.

b. Insert the shutter release lever (1, figure 5).

c. Position the interlock return spring (15) as shown in figure 25. The long terminal will lay beneath the coil spring on interlock lever stud shaft and bear against the body wall; the short terminal will be hooked to the long arm of the interlock release lever (13) when it is installed.

d. Position the interlock release lever crank (14A, figure 4) over the flat of the release lever.

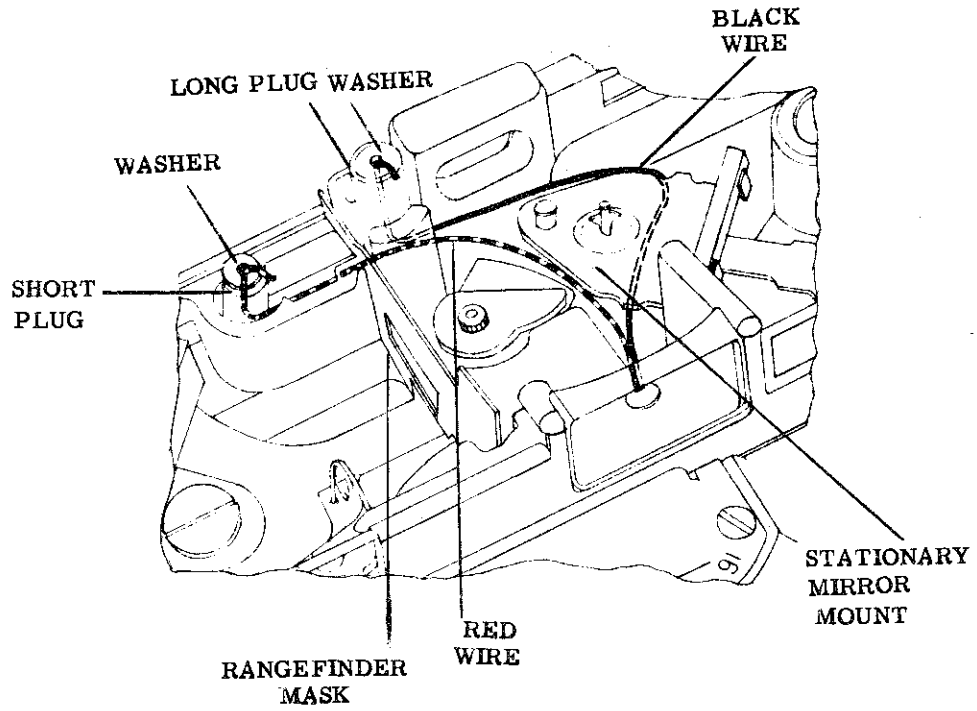


Figure 24. Synchronization Wires

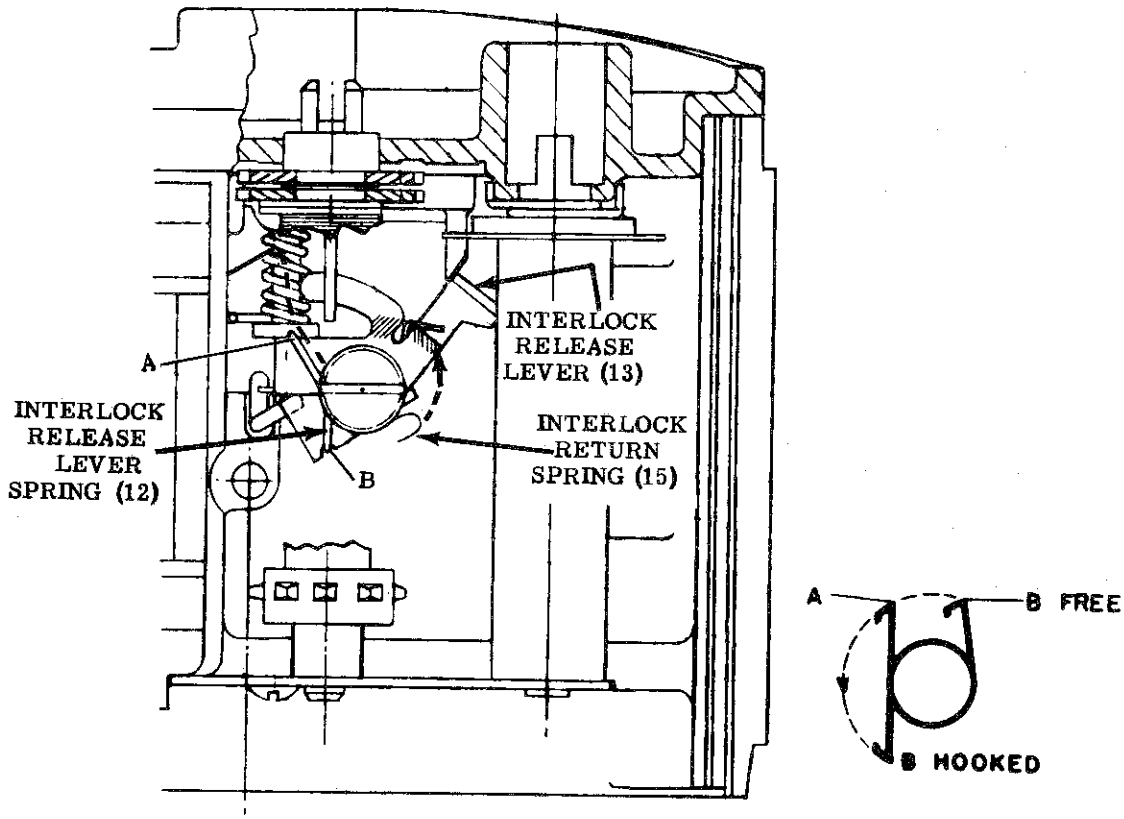


Figure 25. Interlock Spring Connections

e. Position the interlock release lever (13) over the crank so that the hook engages the slot of interlock lever and the short arm tab lies between the stud head and the shutter release wire. Assemble shoulder screw (16).

f. Hook the interlock return spring (15) on the interlock release lever (13) as shown in figure 25.

g. Assemble the interlock release spring (12) as shown in the insert, figure 25. Use a small screwdriver to snap it over the head of shoulder screw (16). Terminal, "A", figure 25, freely hooks onto the short arm of the interlock release lever. Terminal "B" is pulled around, counterclockwise, over terminal "A" and hooked in the notch of the release lever crank.

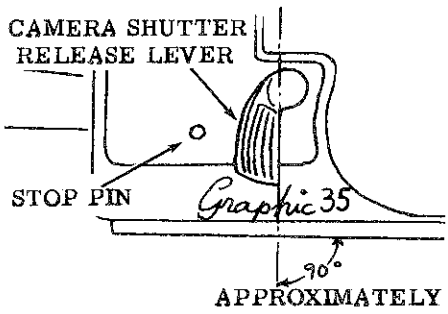


Figure 26. Shutter Release Lever Adjustment

7.9. Shutter Release Adjustment.

a. The straight edge of the camera shutter release lever (1, figure 5) should be at right angles to the bottom edge of the camera. A line from the straight edge of the lever would cross the center-edge of the letter "h" in Graphic "35" on the camera body.

1) If the lever is less than 90 degrees, increase by spreading the arms of the release lever crank (14A, figure 4) by twist ing a screwdriver blade between the arms.

2) If the lever is more than 90 degrees, decrease by pinching the arms of the release lever crank together with a thin nose pliers.

b. Shutter Release Crank Adjustments. At this time it is possible to cock the shutter and release it by pressing on the shutter release crank (figure 27). Furthermore, play between the shutter release crank and the shutter release arm should not be more than 0.020 inch ; and after release of the shutter, the shutter release arm should have at least 0.010 inch travel before it stops or touches the shutter case. These adjustments are made by bending the shutter release arm or by changing the angle of relationship of the inside and outside terminal of the shutter release crank as shown in figures 28 and 29.

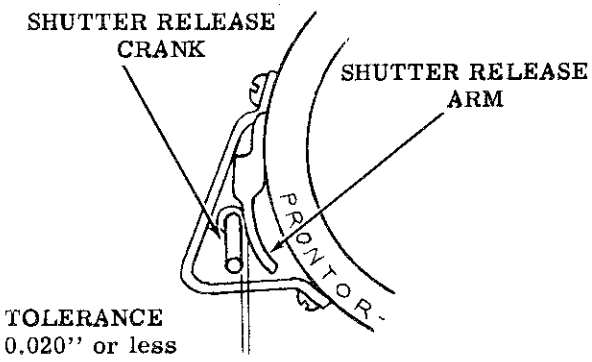


Figure 27. Shutter Release Adjustment

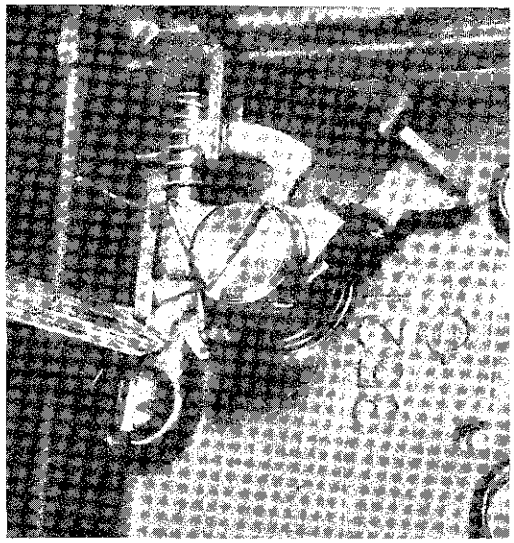


Figure 28. Shutter Release Crank-Inside Terminal Adjustment

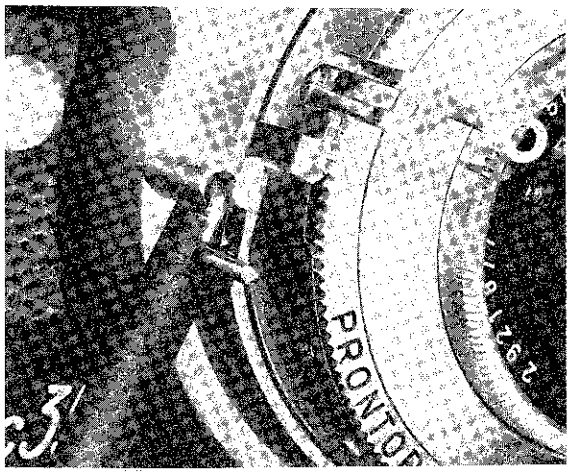


Figure 29. Shutter Release Crank-Outside Terminal Adjustment

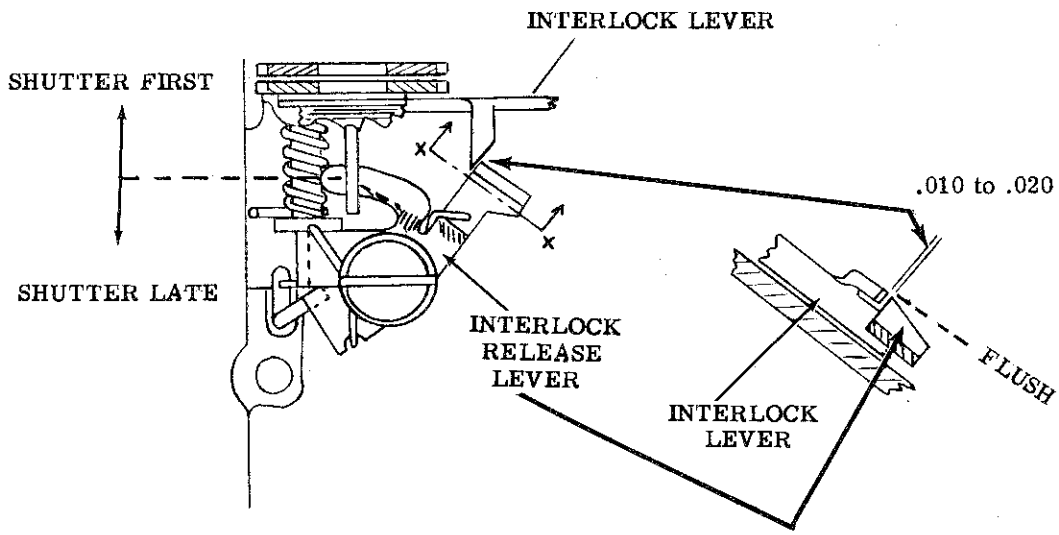


Figure 30. Interlock Release Lever Shutter Adjustment

7.10. Film Advance Mechanism Assembly.

a. Clean the counter dial shaft (11, figure 2) and the inside diameter of the counter dial on the cover with toluol to remove all traces of grease and dust; if this is not done, the counter may not operate with assurance, but stick or jump. Position the counter dial shaft (11) through the inside of the camera and into the cover counter dial. Insert the counter dial spring (12) through the inside of the camera and around the lower keyed shaft of the counter dial shaft.

b. To facilitate assembly of the counter adapter (10, figure 4) and the sprocket shaft (8), fold and wedge small piece of cardboard (1/2 of paper match folder) under the outside edge of the interlock lever (13)so that it is lifted back and tilted down from the top. Assemble the counter adapter (10) so that the keyed shaft engages the counter dial shaft; do not use washer (11) on any model. Lubricate the bearings of the sprocket shaft assembly (8) with Texaco Unitemp grease, position the metering dog (9A) in the top sprocket gear and position in the camera. Remove the wedge. Be sure that the interlock release lever (13) is still hooked into the rectangular slot of the interlock lever.

c. Place the film guide (7) on the spool (4). Follow with the ratchet (6) positioned so the teeth would engage the hooked end of the interlock lever. See position on figure 4. Lubricate the spring (5) lightly with Unitemp and slide on the spool with the spring terminals extending away from the ratchet (6). Slide the spool assembly into the housing. Be certain the spring (5) is in the position shown in figure 4 with one end of the spring on each side of the raised take-up shaft bearing on the housing.

NOTE: If current take-up spool ratchet (6), 0.050 inch thick, and film take-up guide (7), 0.010 inch thick, are used, add washer (3) at the bottom of take-up spool (4). The washer should be curved about 1/16 inch deep to act as spring washer.

d. Locate the bearings of the sprocket and take-up spool in the take-up shaft plate (1) and assemble two machine screws (2).

7.11. Film Advance-Shutter Release Interlock Adjustment.

a. Make the inspections described in the preceding operations, paragraph 7.9, to be certain the body shutter release lever and shutter release crank are properly positioned before preceeding with the following inspections.

b. Cock the shutter; wind the sprocket shaft assembly (8, figure 4) with the fingers and hold with light tension similiar to that applied by loaded film. Very slowly operate the camera shutter release (1, figure 5) by hooking the thumb nail on the front shutter release stop pin (2) and squeezing the camera shutter release with the index finger. The sprocket shaft should release slightly before the shutter releases. The interval between sprocket shaft release and shutter release should allow the body release to move less than 1/64 inch. Adjust as instructed in the following paragraph c. Furthermore, at shutter release, the body release should be about 1/16 inch from the stop pin (2, figure 5); adjust as instructed in paragraph 7.9.a.

c. In the preceeding paragraph,

1) Shutter releases before sprocket shaft - slightly twist the hooked arm of the interlock release lever toward the top of the camera (figure 30). Use tool as illustrated in figure 31 (6, figure 1).

2) Body release travels too far between sprocket and shutter release (shutter late) slightly twist the hooked arm of this interlock release lever toward the bottom of the camera.

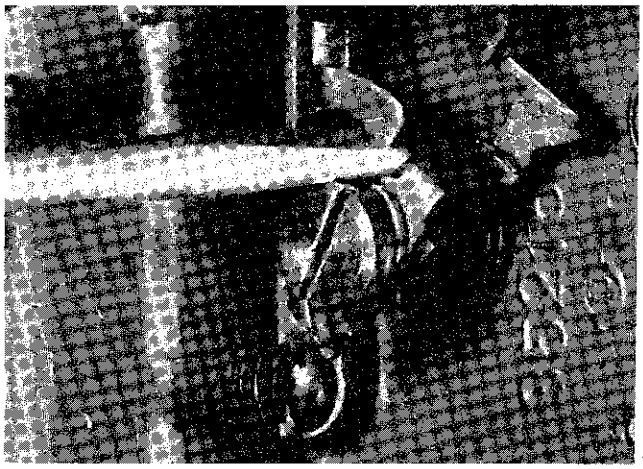


Figure 31. Interlock Release Lever Adjusting Tool

NOTE: Extra effort should be made on this adjustment to keep the interval between the point the counter shaft (8, figure 4) releases and the shutter release to an absolute minimum, thereby insuring smooth camera operation and no film waste.

d. With shutter released, hold the body release in release position. Turn the sprocket shaft until it locks. If it does not lock after one revolution or less, slightly twist the hooked arm of the interlock release lever toward the bottom of the camera. Recheck this proceedure and that of preceeding paragraph b - readjust if necessary.

e. With shutter released, note the clearance between the large arm of the interlock release lever and the pointed arm projecting from the interlock lever. This clearance should be .010 to .020 inch (figure 30) and flush as shown in cross section. If this clearance is not correct, bend the large arm as shown in figure 32.

f. With shutter cocked, but no tension sprocket shaft, pull the body release. The shutter must not trip. If the shutter trips, it is because the pointed arm of the interlock lever does not hold the interlock release lever. Therefore it will be necessary to insert a screwdriver through the bottom bearing plate and pry up to bring it flush. On the other hand, if it is too high, the parts will drag on each other and not return freely.

7.12. Top Cover Reassembly (Figure 8).

a. Place the medallion (7) on the cover (9) with the wording facing the rear of the cover. Bend the medallion lugs firmly against the inside of the cover.

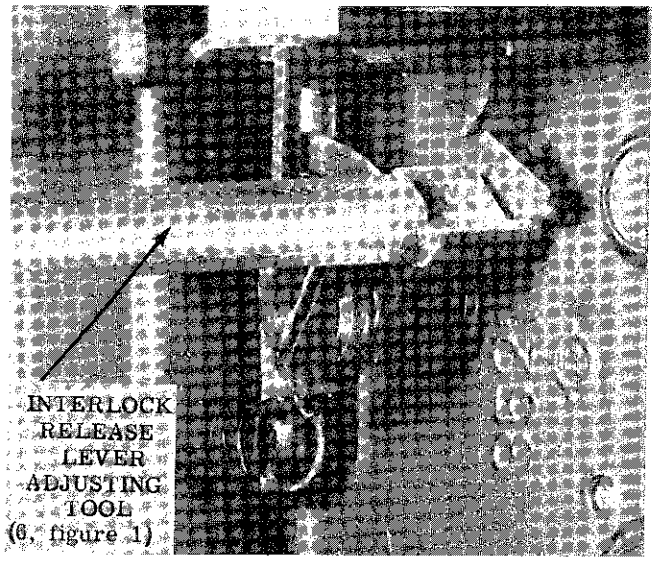


Figure 32. Interlock Release Lever Metering Adjustment

b. Lubricate the take-up knob bushing lightly with Unitemp and place the knob brake spring (6) on the bushing with the looped end of the spring at the top. Slip the first coil of the spring over the hub of the bushing and spiral the rest of the spring on the bushing. Slide the sleeve (5) with the notch at the top over the spring (6) so the loop of the spring rests in the notch.

c. Assemble the take-up shaft spring (2) to the shaft (1) and place in the top cover. Tighten the take-up knob (3) securely to the shaft (1).

d. Cement the pad (8) with 3M-EC880, or, if coated, reactivate with toluol and locate rear inside and centered above the viewfinder eyepiece window.

7.13. Back Cover Reassembly

a. Insert the lock lever (3, figure 9) in the bottom of the back cover assembly (7). With the base of the lock lever resting on a firm surface, replace washer (6) and retaining ring (5). Place the cover lock adjustment tool (figure 1) over the retaining ring (5) and press the ring firmly against the back cover. Drive the cross pin (4) into the end of the lock lever until there is an equal nominal distance at each end of the pin.

b. Replace the pad assembly (1) by fitting the forked ends of the spring arm around the back cover studs.

c. To replace the covering (2) remove all the old adhesive from the back cover (7). Reactivate the old cement on the covering with Toluol. If reactivating will not secure the covering, coat the back cover and covering with EC-880 cement.

d. If the lock lever (3) has been disassembled, it may be necessary to adjust the cover lock spring on the body. Use the cover lock spring adjusting tool (2, figure 1) as shown in figure 33. The slotted end of the tool is used to lift or bend the sides of the spring; the elbow of the shank acts as a fulcrum on the body casting.

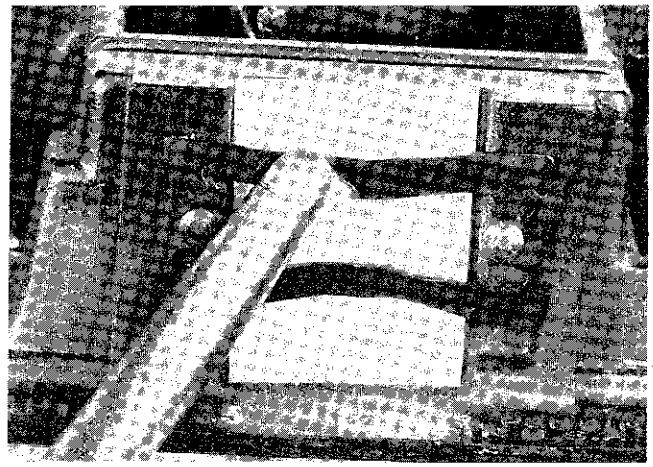


Figure 33. Cover Lock Spring Adjustment

PARTS LIST

The Group Assembly Parts Lists are listed in disassembly order. The list divides the components into major assemblies, their subassemblies and parts. By the use of intented columns, the relationship of the assemblies to the subassemblies and parts is obtained.

The column titled "Figure and Index No." contains the index number in disassembly order of the items illustrated. Do not use the figure or index number in correspondence--specify the catalog or part number and name.

The column titled "Nomenclature" (including numbered columns) lists item nomenclature on the Graflex drawing. The assembly in the column marked "3" will be a component of the first assembly which preceded it in the column marked "2" etc.

The column titled "Unit List Price" is for one item, not the quantity listed in the preceding column.

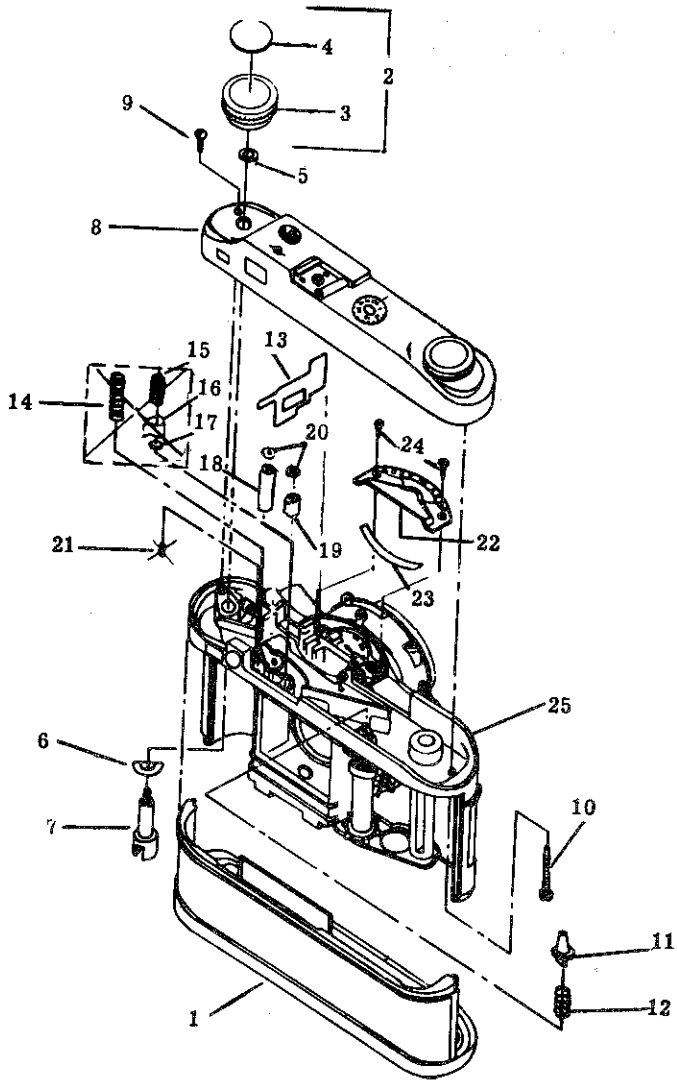


Figure 1. Camera Complete

Figure and Index No.	Part Number	1 2 3 4 5 Nomenclature	Qty.	List Price
1-	Camera	Camera Complete-Graphic "35"	Ref.	See Price List
-1	35249-G1	. Cover Complete-Back (see figure 7)	Ref.	
-2	35345-G1	. Knob Assembly-Rewind	1	1.25
-3	35346-P1	. . Knob-Rewind	1	1.20
-4	34111-P3	. . Insert-Rewind Knob	1	.08
	Attaching Parts			
-5	33500-P41	. Washer-Flat, 0.338 in. OD. 0.140 in. ID. 0.025 in. thk. steel, black oxide (S-7) (Replaced by 35473-P10) .	1	.01
	35473-P10	. Washer-Flat, 0.312 in. OD, 0.128 in. ID. 0.032 in. thk. brass (Replaces 33500-P41)	1	.01
-6	30028-P3	. Washer-Spring, 0.438 in. OD. 0.237 in. ID, 0.006 in. thk. steel, black oxide (S-7)	1	.01
-7	35226-P1	. Shaft-Rewind	1	.25
	---***---			
-8	35256-G1	. Cover Complete-Top (see figure 6)	Ref	
	Attaching Parts			
-9	35046	. Screw-Special, 1/4 in. #3-48 RH, 0.156 or 0.161 diam. head (Replaced by 102B3-3 below)	1	.04
	102B3-3	. Screw-Machine, 3/16 in. #3-48 RH chrome plate (P22) . . (Replaces 35046)	1	.01
-10	30921-P29	. Screw-Self Tapping, 1/2 in. lg, #2 oval binding head steel black oxide (S-7)	1	.01
	---***---			
-11	35203-P1	. Shaft-Counter dial	1	.25
-12	35296	. Spring-Counter dial	1	.01
-13	35218-P1	. Mask-viewfinder	1	.02
-14	35329	. Spring-Long contact (Used on earlier model) Obsolete . . .	1 (Ref)	NA
-15	35251	. Spring-Short contact (Used on earlier model) Obsolete . . .	1 (Ref)	NA
-16	35288	. Insulator-Short contact (Used on earlier model) Obsolete .	1 (Ref)	NA
-17	35327	. Plug-Insulator (Used on earlier model) Obsolete	1 (Ref)	NA
D -18	35045-P1	. Plug-Long contact (Used on current model).	1	.01
-19	35045-P2	. Plug-Short contact (Used on current model)	1	.01
-20	33500-P2	. Washer-Flat, 0.125 in. OD. 0.042 in. ID. 0.025 in. thk. brass (Use with 35045-P1 & P2 only)	2	.02
-21	35048	. Tube-Insulator (Used with cameras having shutter wires passing inside of lens tube) Obsolete	2 (Ref)	NA
-22	35317-P1	. Cover-Lens mount and focusing dial	1	.80
-23	35281	. Spring-Retaining	1	.01
	Attaching Parts			
-24	35044-P2	. Screw-Special	2	.04
	---***---			
-25	Ref	. Body Assembly	Ref	

D Synchronization Contacts (Index 14 thru 17) replaced by plug and washer (Index 18 thru 20)

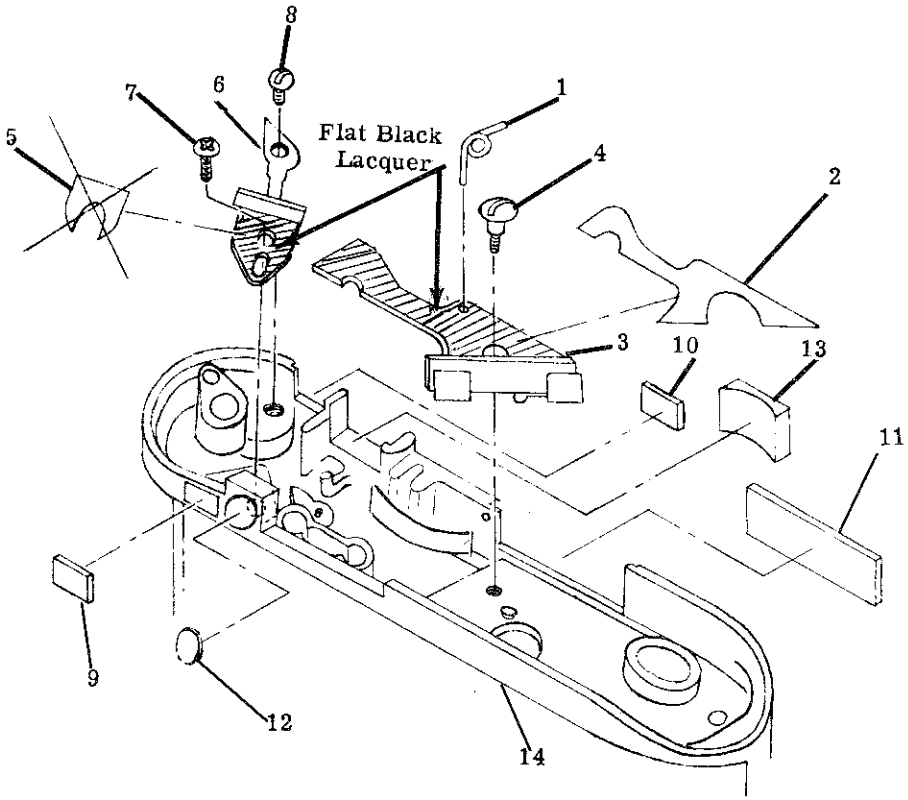


Figure 2. Rangefinder and Viewfinder

Figure and Index No.	Part Number	1 2 3 4 5 Nomenclature	Qty.	List Price
2-	Ref	Body Assembly (Rangefinder and Viewfinder)	Ref	
-1	35198	. Spring-Rangefinder	1	.01
-2	35194-P1	. Mask-Triangulating mirror (Obsolete-flat black lacquered)	1 (Ref)	NA
-3	35244-G1	. Mirror Assembly-Triangulating	1	1.25
	Attaching Part			
-4	35290	. Screw-Special	1	.08
	---***---			
-5	35195	. Mask-Fixed mirror (Obsolete-flat black lacquered)	1 (Ref)	NA
-6	35241-G1	. Mirror Assembly-Fixed	1	.85
	Attaching Parts			
-7	112B3R6	. Screw-Machine 3/8 in. lg., #3-48 oval bind head Phillips drive, brass, ebonol (S-18) (Replaced by 112B3R4).	1 (Ref)	NA
	112B3R4	. Screw-Machine, 1/4 in. lg., #3-48 oval bind-head, Phillips drive, brass, ebonol (S-18) (Replaces 112B3R6)	1	.01
-8	110-2-3	. Screw-Machine, 3/16 in. lg., #2-56 straight side bind head, slotted, steel, black oxide (S-7). . . .	1	.01
	---***---			
-9	35109	. Window-Rear	1	.05
-10	35110	. Window-Front, small	1	.05
-11	35111	. Window-Front, large.	1	.05
-12	35224	. Eyelens, Viewfinder	1	.75
-13	35332-P1	. Lens-Viewfinder, objective	1	.85
-14	Ref	. Body Assembly-Third	Ref	NA

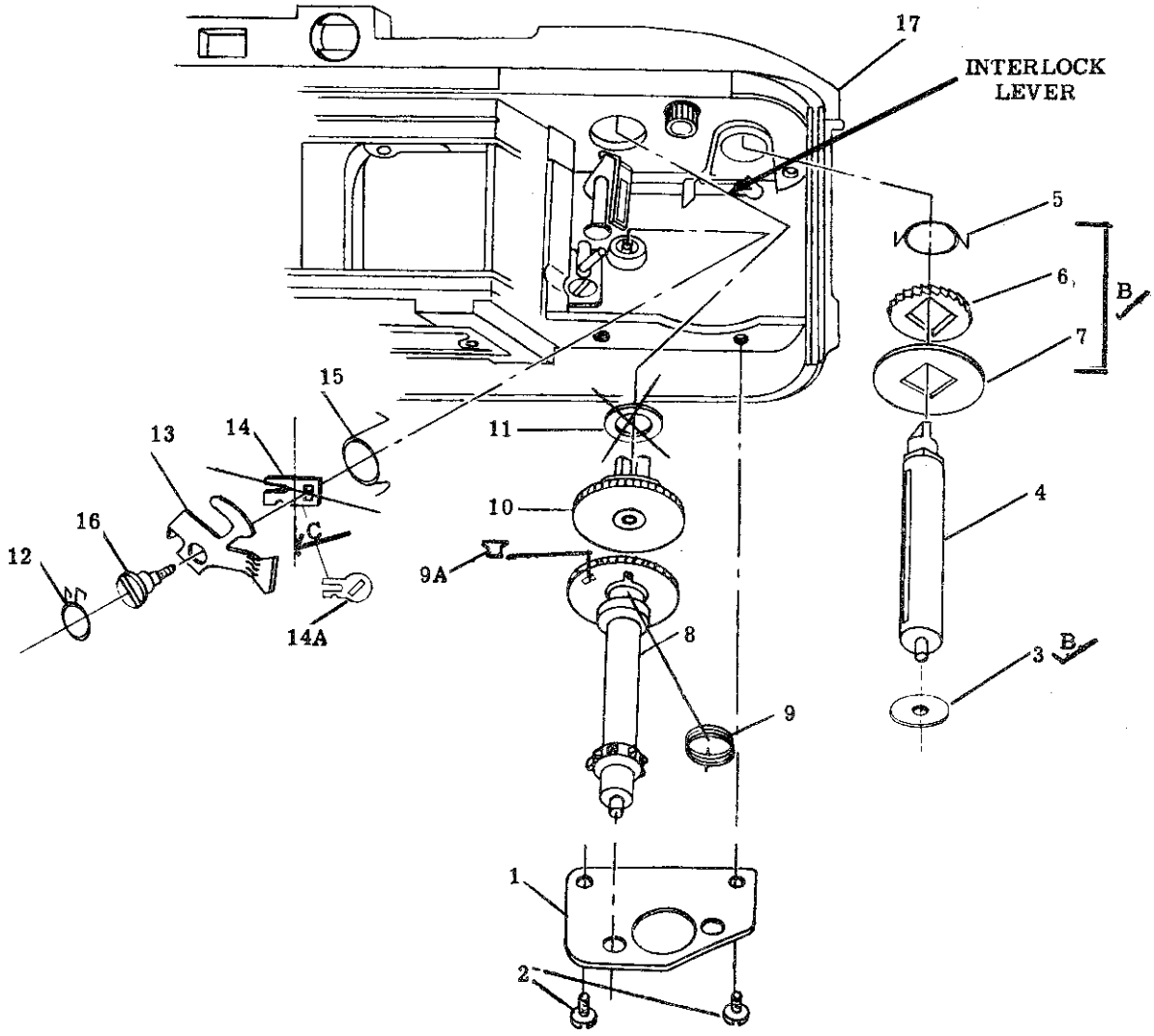


Figure 3. Film Advance and Metering

Figure and Index No.	Part Number	1 2 3 4 5 Nomenclature	Qty.	List Price
3 -	Ref	Body Assembly Third (Film Advance and Metering)	Ref	
-1	35233	. Plate-Take-up shaft	1	.09
	Attaching Parts			
-2	30921-P22	. Screw-Self tapping, 3/16 in. lg., #2 oval head Phillips drive, steel. (Used on earlier model cameras) . .	2	.01
	102B3-3	. Screw-Machine, 3/16 in. lg. #3-48 round head brass, chrome plate (P22). (Used on current model cameras)	2	.02
		---***---		
B -3	35473-P7	. Washer-Flat 0.390 in. OD, 0.155 in. ID, 0.005 in. thk. brass	1	.01
-4	35330-P1	. Spool - Take-up	1	.25
-5	35349	. Spring-Spool retard	1	.05
B -6	35201	. Ratchet - Take-up Spool (0.050 in. thick).	1	.40
B -7	35338	. Guide-Film take-up (0.010 in. thick).	1	.03
-8	35238-G1	. Shaft Assembly-Sprocket	1	1.75
E -9	35343	. . Spring-Transport stop disc (Obsolete)	1 (Ref)	NA
-9A	35058	. Dog-Metering (Use with current Index 8).	1	.02
-10	35240-G1	. Adapter Assembly-Counter.	1	.25
-11	30473-P75	. Washer-Flat, 0.562 in. OD, 0.343 in. ID, 0.015 in. thk brass Ebonol (S-18) (Obsolete-not required)	Ref	NA
-12	35341	. Spring-Interlock release lever	1	.12
-13	35300-P1	. Lever-Interlock release	1	.10
C -14	35340	. Crank-Interlock release lever (Used on earlier model cameras)	1	.03
C -14A	35054	. Crank-Interlock release lever (Used on current model cameras with release lever #35055-P1 only, see 1, figure 4)	1	.03
-15	35333-P1	. Spring-Interlock return	1	.04
	Attaching Part			
-16	35339	. Screw-Special	1	.08
		---***---		
-17	Ref	. Body Assembly	Ref	

B Take-up Spool Ratchet and film Guide are thinner - use spring washer (Index 3) at lower end when modifying.

C Release Lever Crank must conform with Release Lever (1, figure 4).

E Sprocket Shaft Assembly - new assembly uses dog (Index 9A) instead of spring Index 9.

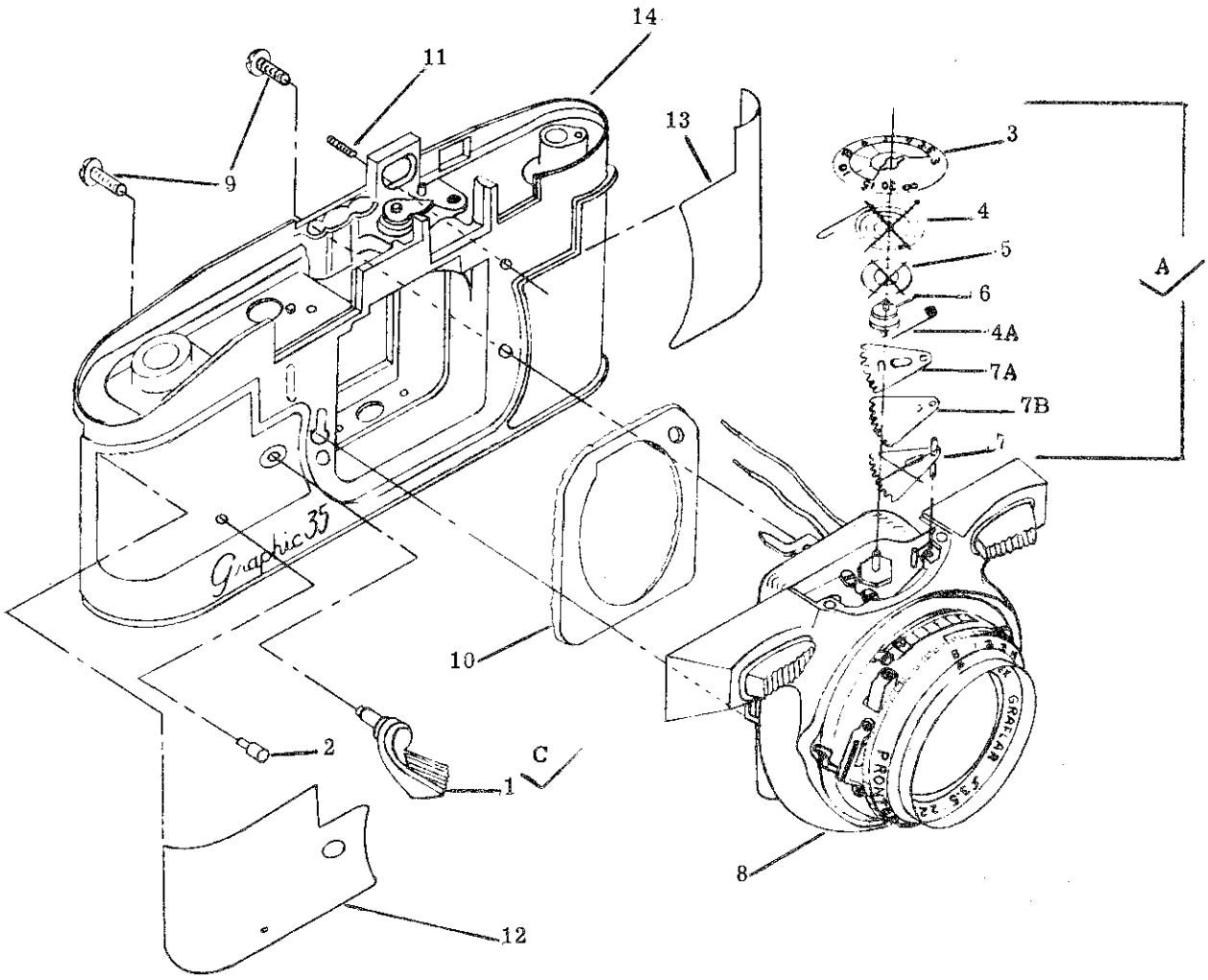


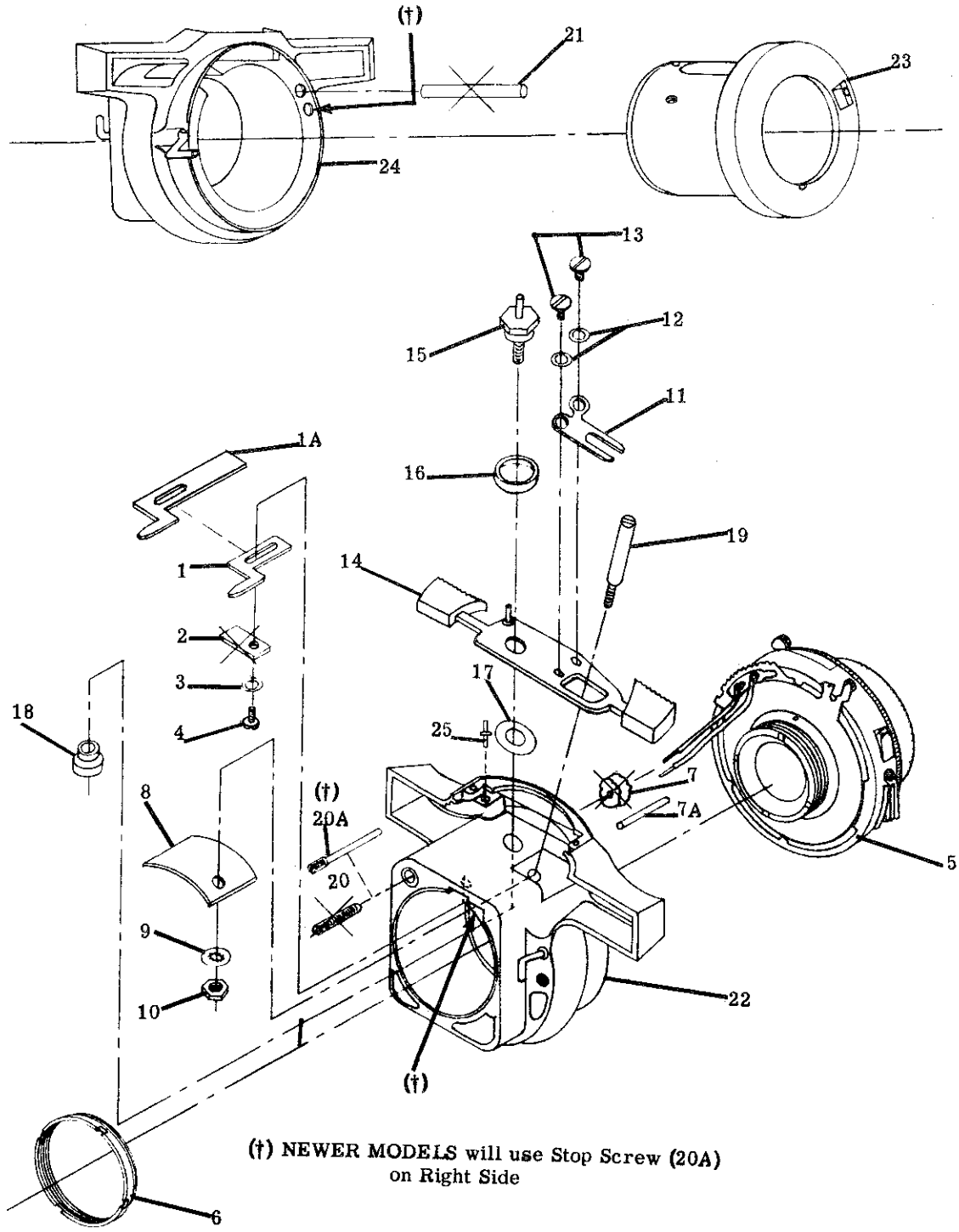
Figure 4. Body Lens Mounting

Figure and Index No.	Part Number	1 2 3 4 5 Nomenclature	Qty.	List Price
4 -	Ref	Body Assembly (Lens Mounting)	Ref	
C -1	35322-P1	. Lever-Shutter release, 0.138 inch dia. shaft. (Used on earlier model cameras with crank #35340 only. See 14, figure 3)	1 (Ref)	NA
	35055-P1	. Lever Shutter Release, 0.203 inch dia. shaft. (Used on current model cameras with crank #35054 only. See 14, figure 3)	1	1.00
-2	35344	. Stop-Shutter release lever	1	.15
-3	35311-P1	. Dial-Focusing Scale (Replaced by 35064-P1)	1 (Ref)	NA
	35064-P1	. Dial-Focusing Scale, seven colors (Replaces 35311-P1) . . .	1	.35
-4	35316-P1	. Spring-Backlash	1 (Ref)	NA
-4A	35052	. Spring-Segment	1	.07
A -5	33500-P53	. Washer-Flat, 0.550 in OD, 0.250 in ID, 0.002 in thk brass .	1 (Ref)	NA
-6	35312-P1	. Pinion-Dial	1 (Ref)	NA
-7	35313-G1	. Gear Assembly-Segment	1 (Ref)	NA
-7A	35053-P1	. Gear-Segment Upper	1	.10
-7B	35314-P1	. Gear-Segment Lower	1	.10
-8	35323-G1	. Mount-Complete-Lens (see figure 5)	Ref	
	Attaching Parts			
-9	*30921-P35	. Screw-Self tapping, 7/16 in. lg. #4 oval binding head, steel (See note)	2	.03
	*102-5-7	. Screw-Machine, 7/16 in. lg. #5-40 NC-2, round head, steel black oxide (S-7) (See note)	2	.03
	*102-4R6	. Screw-Machine, 3/8 in. lg., #4-40 NC-2, round Phillips head steel, black oxide (S-7) (See note)	2	.03
	---***---			
-10	35297-G1	. Seal Assembly - Light	1	.25
-11	170D4-5	. Screw Set, 5/16 in. lg., #4-40 flat point, slotted steel, black oxide (S-7) (3 feet focus adjustment)	1	.03
-12	35236-P1	. Covering - Right	1	.15
-13	35245-P1	. Covering - Left	1	.15
-14	35257-G1	. Body Assembly-First (less covering) (May require a rework operation.) See Text Part 8B	1	13.50

* Determine the screw size used to secure the mount complete #35323-G1 of the particular camera before ordering these screws.

A Focusing Scale Modification - all (NA) Not Available parts are replaced. Be sure to use Sector Gear Stud (25, figure 5.)

C Release Lever must conform with Crank (14 or 14A, figure 3).



(†) NEWER MODELS will use Stop Screw (20A)
on Right Side

Figure 5. Mount Complete - Lens

Figure and Index No.	Part Number	1 2 3 4 5 Nomenclature	Qty.	List Price
5-	35323-G1	Mount Complete - Lens	1	44.00
-1	35199-P1	. Actuator-Rangefinder (Narrow-used on early models, requires lens tube shield, index #9).	1	.03
-1A	35067-P1	. Actuator-Rangefinder (Wide-used on current model, does not require lens tube shield).	1	.03
-2	‡35197	. Retainer-Shutter wire (used on camera having shutter wires passing inside of lens tube-now Obsolete when parts modified as in paragraph 6.1.)	1 (Ref)	NA
	Attaching Parts			
-3	221-2	Washer-Lock, internal tooth, shakeproof Cat. No.1202 steel, black oxide (S-7) & oil (S-12) (used on cameras not requiring retainer #35197-Obsolete-replaced by 30473-P25)	1 (Ref)	NA
	30473-P25	. Washer-Flat, 0.281 in. OD, 0.093 in. ID, 0.012 in. thick, steel (replaces 221-2).	1	.02
-4	102-2-2	. Screw-Machine, 1/8 in. lg., #2-56 round head, steel black oxide (S-7) & oil (S-12).	1	.03
	---***---			
-5	34525-P1	. Lens & Shutter Assembly	1	See Shutter Parts List
-6	Ref	. . Jamb Nut-Shutter (Gauthier #00355br-141)	1	See Shutter Parts List
-7	35318	. Seal-Light (used on cameras having shutter wires passing inside of lens tube-Obsolete).	1 (Ref)	NA
-7A	35051	. Sleeve-Shutter wire (used on cameras having shutter wires passing outside of lens tube)	1	.01
-8	35193	. Shield-Lenstube (used with Actuator, item 1)	1	.20
	Attaching Parts			
-9	221-3	. Washer-Lock, internal tooth, shake proof Cat. No.1203 black oxide (S7) and oil (S-12)	1	.01
-10	201-3H	. Nut-Machine, #3-56NF-2 Hexagonal, steel, black oxide (S-7) & oil (S-12)	1	.01
	---***---			
-11	35309	. Bracket-Adjusting	1	.03
	Attaching Parts			
-12	221-2	. Washer-Lock, internal tooth, shakeproof Cat. No.1202, steel black oxide (S-7) & oil (S-12).	2	.01
-13	35326	. Screw-special	2	.03
	---***---			
-14	35307-G1	. Arm Assembly-Focusing (replaced by 35307-G2).	1 (Ref)	NA
A	35307-G2	. Arm Assembly-Focusing (replaces 35307-G1)	1	1.25
	Attaching Parts			
-15	35196-P1	. Stud-Pivot	1	.60
-16	33500-P44	. Washer-Flat, 0.280 in OD, 0.200 in ID, 0.030 in thick Nylon	1	.08
-17	33500-P43	. Washer-Flat, 0.275 in OD, 0.120 in ID, 0.002 in thick, beryllium copper	1	.10
-18	35293-P1	. Bushing-Focusing arm pivot	1	.07
	---***---			
-19	35310	. Stud-driving	1	.07
-20	170D3-6	. Screw-Set, 3/8 in. lg, #3-48 flat, point, slotted steel (replaced by threaded stop #35192).	1 (Ref)	NP
-20A	35192	. Stop-Lens tube, threaded (replace old style un-threaded stop and set screw #170D3-6) (Infinity adjustment)	1	.07
-21	No Number	. Spacer-Lens tube, 1/2 in lg. 1/8 in diam, brass - Obsolete - Used with 170D3-6	1 (Ref)	NP
-22	35323-G1M	. Tube & Mount Assembly-Lens	1	10.00
-23	35056-P1	. . Tube-Lens Mount	1	NP
-24	35301	. . Mount-Assembly-Lens (replaced by 35301-G2)	1	NP
	35301-G2	. . Mount Assembly-Lens (replaces 35301-G1).	1	NP
A -25	35060-P1	. . . Stud-Sector Gear	1	.05

A Focusing Scale Modification-See Index 3 thru 7, figure 4.

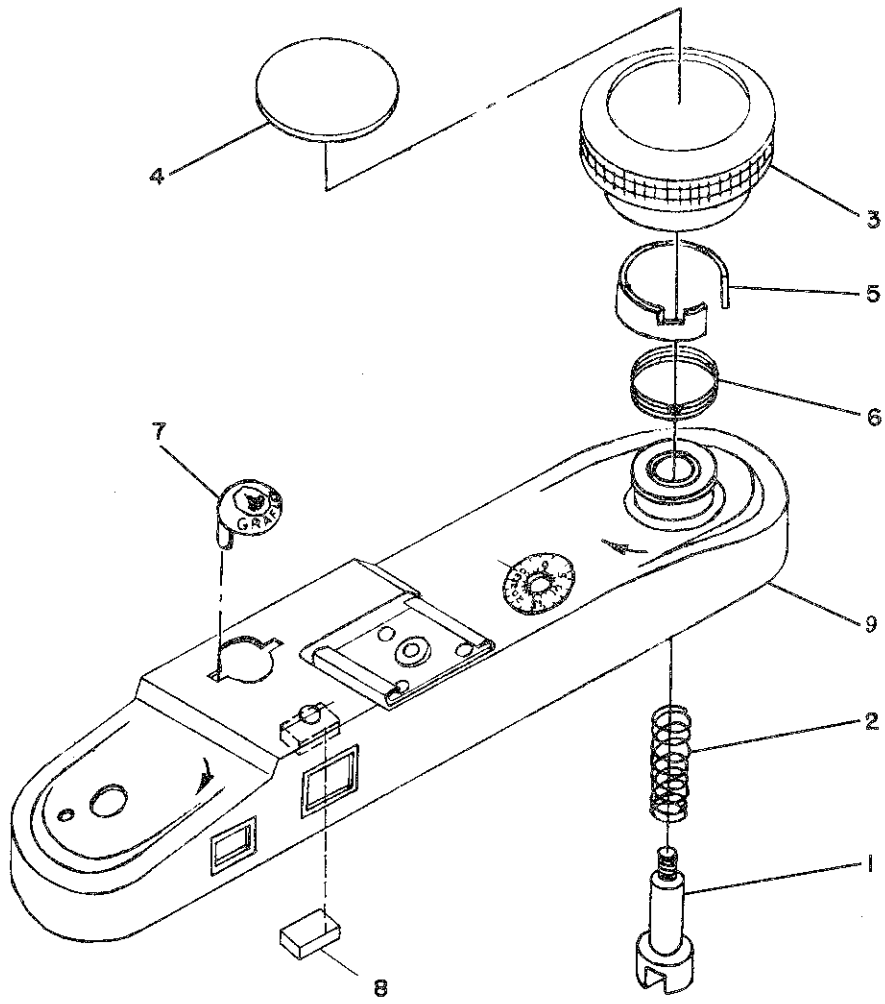


Figure 6. Top Cover

Figure and Index No.	Part Number	1 2 3 4 5 Nomenclature	Qty.	List Price
6-	35256-G1	Cover Complete - Top	1	11.75
-1	35204	. Shaft-Take-up	1	.20
-2	35063	. Spring-Take-up Shaft	1	.02
-3	35346-P2	. Knob-Winding	1	1.25
-4	34111-P3	. Insert-Winding Knob	1	.08
-5	35253	. Sleeve-Knob spring	1	.02
-6	35287	. Spring-Knob	1	.09
-7	35223-P1	. Medallion	1	.09
-8	35256-P10	. Pad-Cover, Neoprene (1/8 x 3/16 x 1/4 inch)	1	.05
-9	35255-G1	. Cover Assembly-Top	1	10.00

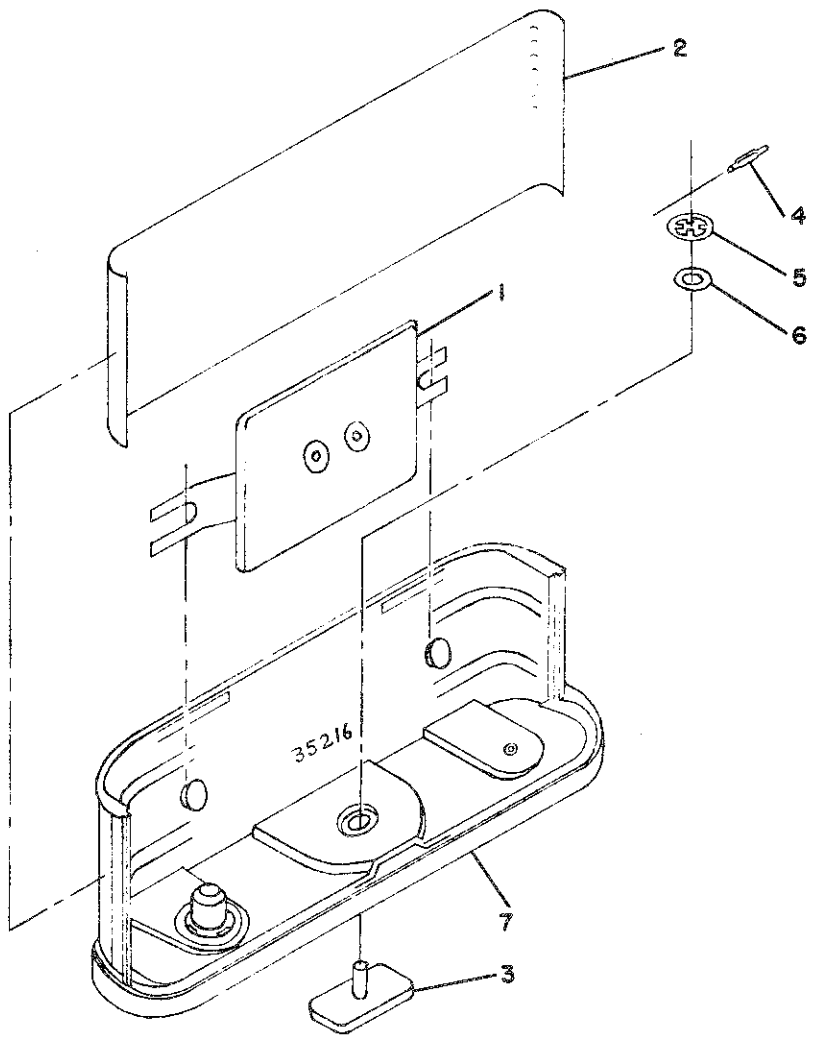


Figure 7. Back Cover

Figure and Index No.	Part Number	1 2 3 4 5 Nomenclature	Qty.	List Price
7-	35249-G1	Cover Complete - Back	1	11.25
-1	35295-G1	. Pad Assembly	1	.60
-2	35232-P1	. Covering	1	.35
	35248-G1	. Back Assembly	1	10.25
-3	35337-P1	. . Lever-Cover lock	1	.60
	Attaching Parts			
-4	34876-P5	. . Pin-Cross, #2 Shakeproof Cat. No. 98-2-CP	1	.02
-5	30241-P22	. . Ring-Retaining, type 4, Waldes-Kohinoor Cat.No.5105-15	1	.10
-6	30540-P5	. . Washer-Flat, 0.437 in. OD, 0.161 in. ID, 0.010 in. thk brass, ebonol (S-18) (Renumbered-was 35473-P1)	1	.04
	---***---			
-7	Ref	. . Back	NP	NHA